



SATURDAY, FEBRUARY 20, 1875.

Summer Station on the Philadelphia, Wilmington & Baltimore Railroad.

We give with this number a front and end view of a very

The Railroad War.

The conflict between the Pennsylvania and Baltimore & Ohio railroad companies has reached one of those crises which seem periodical in their history, and which involve railroad traffic generally to an enormous extent. The following communications from the presidents of the two companies may be considered as the formal declaration of war:

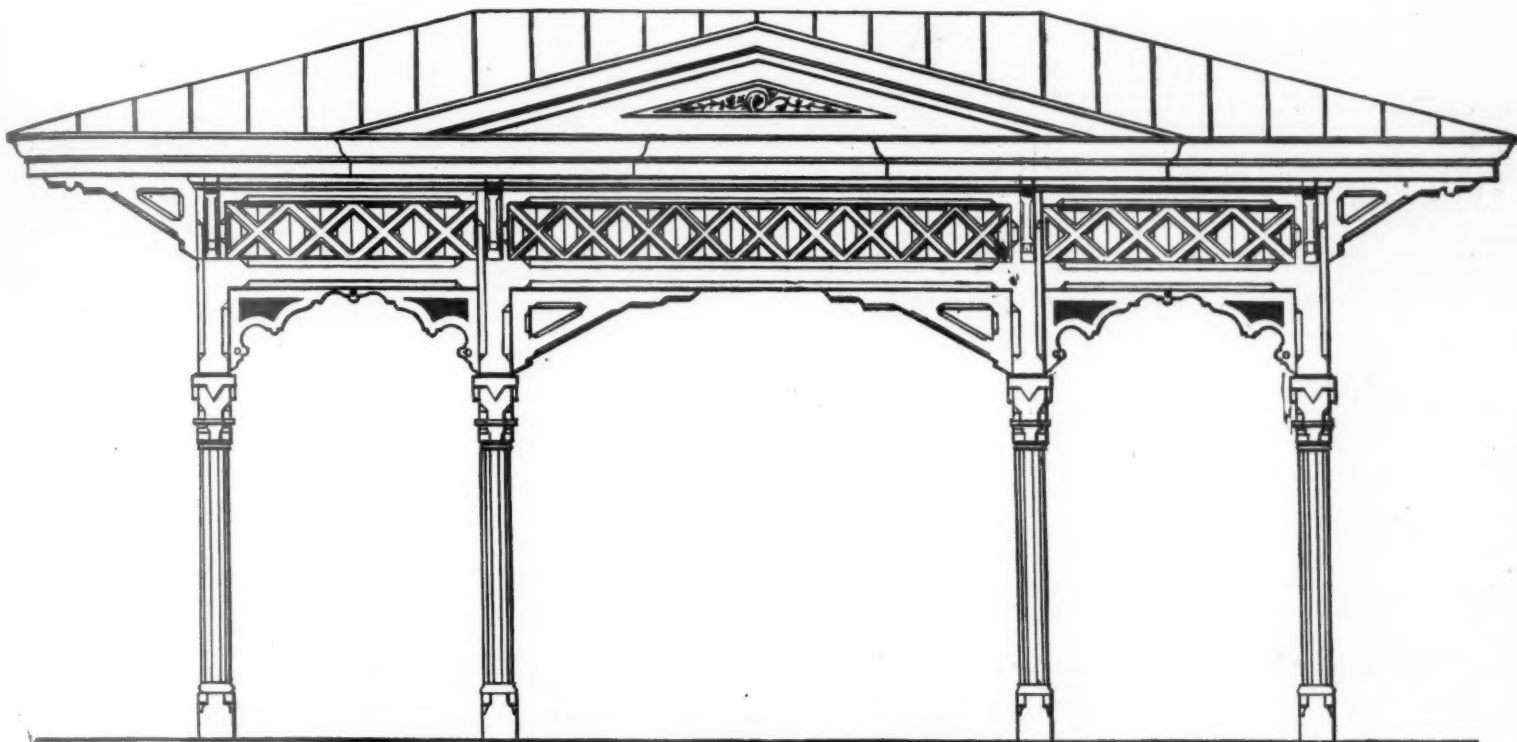
The following, dated Baltimore, Feb. 15, is signed by John W. Garrett, President of the Baltimore & Ohio Company:

"Thomas A. Scott, President, Philadelphia:

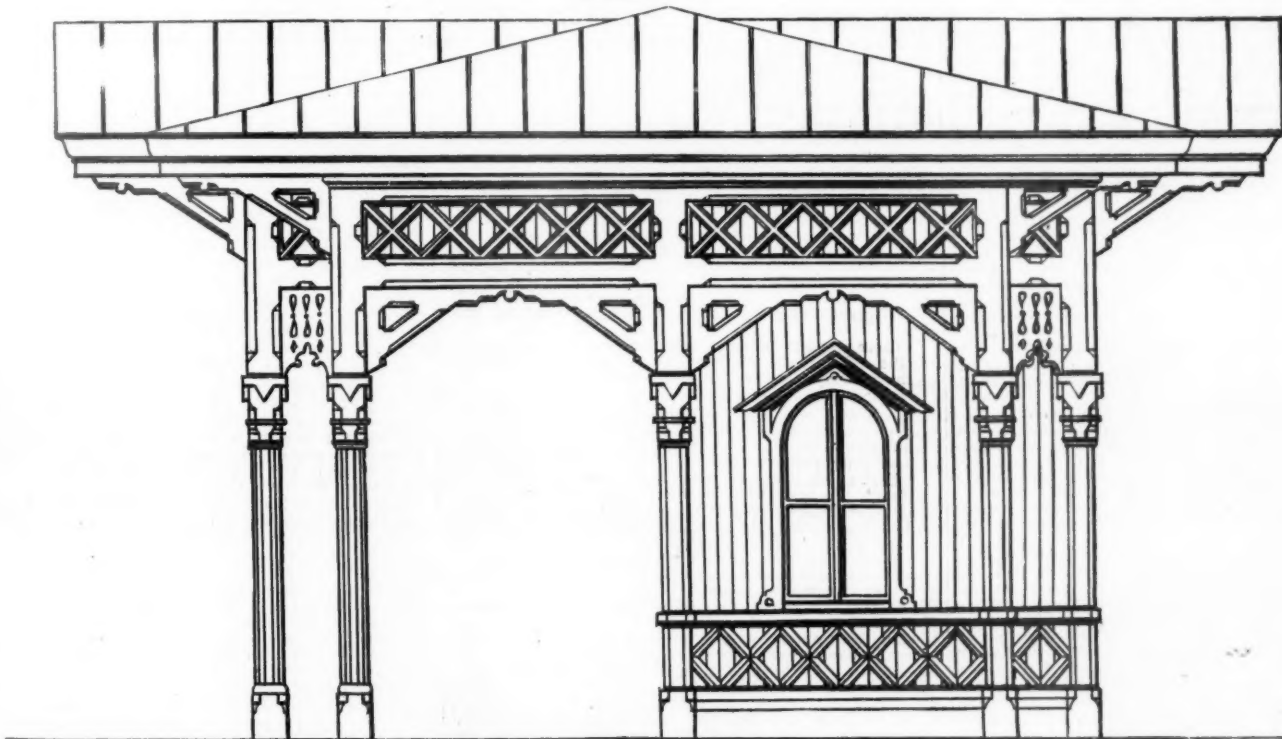
"When Presidents Vanderbilt and Jewett and yourself visited me in Baltimore on the 12th of November last the Bal-

proper and judicious rate for grain and other fourth-class freights between Baltimore and Chicago, and it was a source of regret to this company that this action was not deemed satisfactory by your combination, and that since that period, after various spasmodic efforts for much higher rates, disastrously low rates were from time to time made by your lines for the apparent purpose of causing the Baltimore & Ohio Company to abandon the low, but under the circumstances, according to its judgment, reasonable tariff it had adopted. After three months of irregularities most disastrous to the large interests involved, I learn that your several companies have by unanimous action, within a few days past, adopted the rate originally fixed by the Baltimore & Ohio road, between Baltimore & Chicago, namely, 35 cents, and re-established uniform rates between this city and Eastern cities. The Baltimore & Ohio Company is happy in

SUMMER STATION, P.W. & B.R.R.



FRONT



END



neat design for a station house, a number of which have been built on the above road. There is little that can be added in the way of description which is not shown by the engravings, which, we trust, will incite some railroad companies to exercise a little more taste in the design of such structures than is usually shown by those who build them.

—Mr. D. L. King, President of the Valley Railroad Company of Ohio, left his residence at Akron, O., recently, for England, where he will try to negotiate a loan for the company.

timore & Ohio Company cordially agreed to the abolishment of all commissions on passenger and freight rates, and while declining to enter into your Saratoga agreement, assented to the establishment of rates by the New York Central, New York & Erie, and Pennsylvania companies between Boston, New York, Philadelphia and Western cities, but no effort was made by the representatives of your combination to control the rates of the Baltimore & Ohio Company between Baltimore and the trade centers of the West connected by its lines. On the opening of its road from Baltimore to Chicago, the Baltimore & Ohio Company fixed 35 cents per 100 pounds as a

having the propriety and wisdom of its action on the opening of its road to Chicago thus vindicated. The Baltimore & Ohio Company had fixed rates from Baltimore to Chicago and other Western points which, while low, were deemed judicious and not unremunerative. On the 2d inst. your representative offered in Baltimore to make shipments to all Western points at an enormous percentage of reduction upon our rates thus established. After being satisfied from the continuance of this attack that it was the desire of the Pennsylvania Company to make these rates so unremunerative that the Baltimore and Ohio Company would agree to make advances on rates from Baltimore to the West to an extent that

would violate its policy and be unwise in its judgment, this company deemed it to be its duty to reduce the rates in Philadelphia to Western cities, so as to prove to your company that it was determined to maintain its reasonable and just policy in reference to its rates between Baltimore and the West. As you might very reasonably have anticipated, the rates for freight in Philadelphia became as unremunerative and your market as demoralized as your agents had caused those in Baltimore to be. I am this day advised that your company has resorted to the use of the present monopoly through the Camden & Amboy Railroad between Philadelphia and New York to attempt to deprive the public and the Baltimore & Ohio road of the convenient use of that line by withdrawing the tickets of the through service by the Baltimore & Ohio road from our offices in New York and New England; that you have also ordered that the freight cars of the Baltimore & Ohio road shall not pass over your tracks in the city of Philadelphia, according to usage, from the Philadelphia, Wilmington & Baltimore road to the points of delivery for the merchants and dealers of Philadelphia, and that you propose to put additional trains of cars between Washington and New York for the purpose of interfering with the business of the Baltimore & Ohio Company which passes over its Washington Branch and Western roads. After the experience of the past I can scarcely believe that such action can meet the approval of yourself, the thoughtful executive of your great company, and am prepared for the present to attribute it to reckless subordination. I wish, however, to say that the Baltimore & Ohio Company is prepared, as in December, 1873, to act promptly, effectively, and I know successfully, in maintaining its rights and interests, as well as those of the great States and cities which find the Baltimore & Ohio road and its connections their most valuable, economical and advantageous lines for their business and intercourse with Eastern cities. The Baltimore & Ohio Company has yielded to the demands of your present monopoly between Philadelphia and New York by paying the enormous tribute which you exact of four cents per 100 pounds as a terminal charge on all freight going to and coming from the City of New York, as well as by paying you for 100 miles of transportation, while the actual distance is less than 90 miles. It has also submitted to the unsatisfactory representation of its interest in New York and New England in connection with your monopoly between New York and Philadelphia. But it is due to the grave interests involved to state to you that, if I am correctly informed as to the action of your company, and that you approve of that action, that the Baltimore & Ohio Company will feel at liberty to adopt and will adopt such measures in reference to its passenger rates and otherwise as will vindicate its ability to maintain its rights and to secure equitable and just relations for its business to all proper points. I will be glad to learn that the serious results that will follow to many interests from the course which will otherwise be forced upon this company, and which no one will more sincerely regret than myself, may be averted by the prompt correction of the extraordinary alleged action of your company, of which I have been advised.

The following is the reply of President Scott:

"John W. Garrett, President of the Baltimore & Ohio Railroad Company, Baltimore, Md.:

"I have your remarkable message of Feb. 15, which was received too late to be answered yesterday, by reason of other engagements which needed immediate attention; and a personal friend, to whom you had telegraphed a copy of your message to me, wired you to that effect, and that I would reply this morning. It was with surprise, therefore, that I saw your message to me published in the papers of to-day. But a little reflection has satisfied me that it was intended no doubt more for the papers than for myself, and that this is perhaps the explanation of the unusual course which you have pursued.

"On the 12th of November last you agreed to all you state in your message, and you further a reed with Messrs. Vanderbilt, Jewett, Chapin, myself, and other parties who were present, that while you were not prepared to commit yourself to what was known as the 'Saratoga Compact,' as you had not had time to examine it since your return, you were prepared to say that you would pledge your company to maintain the rates made from time to time to and from Boston and New York, and that those from Philadelphia and Baltimore should also be maintained, the proper geographical distance being preserved to those cities. Had this agreement been carried out by your company in good faith no one would have had cause for complaint; but it is a notorious fact, well known to every man in railway life, that this has not been done, and abundant evidence of that fact can be given at any time.

"I think the unfair statement you gave of that interview to the Press, before the gentlemen who were present had time to reach their homes on quick express trains, was pretty good evidence that you had no purpose of keeping the pledge so solemnly given, though we still hoped it might be observed in accordance with your promise. Early in April last the Pennsylvania Railroad Company was informed that your officers were prepared to make an equitable and fair arrangement in relation to all traffic competitive to the two companies, whether local or through, and that it was desired to divide the passenger business between Washington and New York by giving each company two trains. A number of our officers, including myself and the officers of the Philadelphia, Wilmington & Baltimore road, represented by Mr. Hinckley and Mr. Samuel M. Felton, went to your office in Baltimore on April 17, 1874, and there agreed with your officers upon an arrangement for the trains, with a distinct, clear, and honorable understanding that the rates on business competitive to the lines of both companies, whether for New York, Boston, Philadelphia or Baltimore, and whether local or through, should be at all times maintained in good faith, preserving the proper difference to Philadelphia and Baltimore. This we hoped your officers meant to carry out in good faith, as it was clearly the interest of the stockholders, not only of our companies but of the companies with which we transacted business, that this should be done. It was just to the public, because at no time has this company desired to have rates beyond those which are fairly remunerative, and which should be alike to all shippers, so that no discrimination would be made in favor of any party, and no drawback or commission allowed at any point; every person in the country transacting business with the leading roads will be thus treated fairly and much better satisfaction given than under the then existing system. This agreement has been repeatedly violated by your officers within the past two months. Their attempts in Boston, New York, Philadelphia and Baltimore to take business unfairly and in direct violation of your own personal agreement have been so numerous as to leave this company no other remedy than to take care of its own business and its roads in its own way, and to do what is right and fair to the public and to the roads running in connection with it. You may rest assured, and of this you are no doubt well aware, that your action in fixing a rate of 35 cents per 100 between Chicago and Baltimore had no influence whatever upon the action of the other trunk lines. Your statement in regard to a monopoly across New Jersey comes with a bad grace from your company when our New York & Philadelphia line has been open to the Baltimore & Ohio on the same terms precisely as to all its own connecting lines, including the Philadelphia, Wilmington & Baltimore Railroad.

The rates which you complain of as extraordinary on the New York line for terminal expenses are not sufficient to cover the actual cost of the work done for your business. The taking of the trade from the terminus of our roads in New Jersey, putting the cars on floats, transferring the cars to and

from New York and finding very expensive wharves and warehouses there, and doing the handling and delivery of the trade, cannot in my judgment be done, and the expenses incident thereto paid, for the five cents per hundred charged for this service. By reference to the reports of this company you will see that the cost of moving freight traffic on the New York Division, with grades of but 26 feet to the mile, is greater per ton per mile than on any other portion of our lines, caused entirely by heavy expenditures needed at the terminus, and the cost of receiving and delivering traffic. We desire no profit from any of our connecting lines on this terminal charge, and up to this time have not received a dollar. With your charge in Baltimore over your own road through the streets for delivering cars to the consignees of \$2.50 to \$5 a car, you at the same time requiring the shippers to find their own warehouses and handle the business, it seems to me that you have little right to complain of the charge we make for the extraordinary service and the extraordinary expense we incur at New York in doing the work for your lines. Your statement in regard to the protection of the States and interests, which you seem to think are under your charge, sound very peculiarly coming from the President of the Baltimore & Ohio Railroad, who for a period of over 15 years declined to allow the Northern Central and Pennsylvania railroad companies, and the lines connecting with them to and from the Western and Northern States, facilities by which they could receipt a passenger over your road, check his baggage, or bill a pound of freight to and from the national capital. I think the time for demagoguism in railway management to build up personal fame at the expense of our neighbors has passed. So far as this company is concerned, you may rely upon it that we will protect the business of Philadelphia, and place Baltimore, New York and other points accessible by our lines on an equitable and fair business basis in all matters relating to transportation over our own road. While we desire moderate rates for the service performed, believing that it is best for the public and for the owners of railway property that this should be the case, we shall always be ready to take care of our share of the business of the country with rates and facilities equal to those of any other company. An examination of the reports of this company for the past year will convince every fair-minded man that the average rates for transportation charged and received by the Pennsylvania Railroad Company over its lines are much below the average of those charged by the Baltimore & Ohio Company. It is true that we give to our local business moderate and fair rates, as compared with those you charge the people of Maryland and Virginia. The lines from Washington and Baltimore, to and from New York, over our roads, shall be made quite as perfect for the convenience of the people from this date as they have ever been at any time in the past. There shall be no inconvenience whatever to the public by reason of your effort to destroy the railroad property of any other parties. I can scarcely believe that the public will object to avoiding the delays of street haulage through Baltimore, and not avail themselves of the better facilities that we shall enjoy hereafter. The Northern Central Railway Company will during the present year perfect its terminal facilities at Baltimore, so as to place that city on a full equality with others on the seaboard, and it will be the duty and interest of the company whose line terminates there to give to Baltimore a line in every respect equal, both as to rates and facilities, to any that the Baltimore & Ohio may be able to offer. You have no foot of railway or a dollar's worth of property north of Baltimore, and yet you have enjoyed through business connections and arrangements for the interchange of traffic. There certainly has never been a time when you could not have had the use of the properties between Baltimore and New York on reasonable and proper terms, and it seems to me most unfair that you should attempt by the course indicated in your message to coerce other parties into a policy that might result in great injury to the property they represent. The operations of this company are conducted with a view to serving the public at a price that will afford a reasonable remuneration to the stockholders on their investment. No policy could be permanent or advantageous which disregards such a purpose, and if the measures to be adopted by the Baltimore & Ohio Railroad Company should produce the results that you anticipate there will be no difficulty in understanding the motives which prompted such a course, and I believe the railway officers and the stockholders that may be injured will hold you, as President of the Baltimore & Ohio road, responsible for this policy of destruction. So far as this company is concerned it is abundantly able to take care of its interests and its stockholders.

The foregoing I believe to be a true statement of the questions presented by you. Their solution depends upon your own action, as the representative head of one of the great corporations of the country. I trust your decision will be such as may be wise and just to the interest you represent, and to those of others that may in some degree be dependent upon your lines, or be affected by it.

THOMAS A. SCOTT, President.

A telegram from Baltimore late on the night of the 16th, says:

"There seems no prospect at present that the war between the Pennsylvania and Baltimore & Ohio will be reconciled, but on the contrary that it will be waged with fierceness.

"President Garrett to-night states that President Scott's telegram of to-day is a tissue of gross misstatements and misrepresentations from beginning to end, all of which he can readily demonstrate by irrefutable evidence, and that his plan of protecting the mercantile interests of Philadelphia and New York by his attempted exclusion of the Baltimore & Ohio Company, his most vigorous competitor for traffic, will certainly prove the reverse of satisfactory to the merchants of those cities. In order to compel the Pennsylvania road to reopen the gateways of commerce to the people of Philadelphia and New York for the Baltimore & Ohio road and its connections, orders have been given by the Baltimore & Ohio Company for an immense reduction of the passenger rates between Washington, Baltimore and Philadelphia, and the leading Western cities, viz.: Between Chicago and Baltimore and Washington, from \$19 to \$10; between Cincinnati and Baltimore and Washington, from \$16 to \$10; between St. Louis and Baltimore and Washington, from \$23 to \$15; between Louisville and Baltimore and Washington, from \$20 to \$12; between Pittsburgh and Baltimore and Washington, from \$8.50 to \$6. A similar reduction has also been made between Philadelphia and Chicago, Cincinnati, St. Louis, Louisville, and Pittsburgh. These reductions take effect at once.

"It is understood that the Baltimore & Ohio company is arranging for a line of first-class steamships for the conveyance of freight between New York and Baltimore. All its western connections have telegraphed to the Baltimore & Ohio company that they will cheerfully co-operate in its policy throughout as long as the Philadelphia road continues to obstruct its business to Philadelphia and New York."

Transportation in Congress.

In the Senate on the 10th:

The Senate bill to regulate steam railroad track and horse railroads in the city of Washington by a commission was passed.

In the House on the 10th:

Mr. Hurlburt, of Illinois, from the Committee on Railroads and Canals, reported a bill to aid the Washington, Cincinnati

& St. Louis Railroad Company to construct a narrow-gauge railroad from tide water to St. Louis and Chicago. Referred to the Committee of the Whole.

While in Committee of the Whole on the Post Office Appropriation Bill, Mr. Holman, of Indiana, moved to add to the item appropriating \$17,548,000 for inland mail transportation, a proviso that no part of the money should be used to increase the compensation of railroad companies beyond the rates now received by them. This amendment was rejected, after discussion, by a vote of 45 to 103.

In the Senate on the 12th:

The report of Major Wm. E. Merrill on the surveys for the extension of the Chesapeake & Ohio Canal to a connection with Pittsburgh was laid before the Senate by the Secretary of War, and referred to the Committee on Transportation.

The bill providing for the construction of the Portland, Dalles & Salt Lake Railroad and Telegraph, and guaranteeing interest on its bonds at the rate of \$10,000 per mile was taken up. The Senators from Oregon alone favored it, and in the course of the discussion, Mr. Frelinghuysen, of New Jersey, said that the Committee on Railroads this session had had before them six or seven subsidy bills, had considered them carefully, heard arguments, and concluded not to report any of them favorably. The bill was rejected by a vote of 46 to 21.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Oil Creek & Allegheny River.—At the annual meeting in Philadelphia, February 10, the following directors were chosen: Wm. M. Lyon, John Scott, William P. Shinn, David A. Stewart, Pittsburgh; John W. Moffly, John N. Schriver, Levi N. Wagner, Philadelphia.

Pittsfield & North Adams.—At the annual meeting in Springfield, Mass., February 10, Chester W. Chapin, N. W. Tucker, W. S. Ballard, F. H. Bradley and E. Jackson were chosen directors. The road is leased to the Boston & Albany.

Illinois Central.—Mr. W. K. Ackerman, heretofore Treasurer, has been appointed Auditor. Mr. L. V. F. Randolph, Assistant Treasurer, is appointed Treasurer. Mr. H. L. Shute has been appointed Assistant General Freight Agent.

Peoria & Rock Island.—The Receiver, Mr. Hilliard, has made the following appointments: C. P. James, Cashier and Paymaster, H. C. Whitridge, Auditor; J. V. Mahony, General Freight and Ticket Agent.

New Bedford.—The directors have chosen the following officers for the ensuing year: President, Solomon Howe; Treasurer, Lawrence Grinnell; Clerk, W. Huntley; Cashier, Herbert Ingalls.

Boston, Clinton & Fitchburg.—At the annual meeting in Fitchburg, Mass., February 9, the following directors were chosen: Lyman Nichols, Nathaniel Thayer, S. H. Howe, George A. Torrey, Boston; Cyrus Gale, Northboro, Mass.; E. A. Harris, Clinton, Mass.; Wm. D. Peck, Sterling, Mass.; J. H. Locke, Leominster, Mass.; H. Bliss, Worcester, Mass.; F. B. Fay, Lancaster, Mass.; Wm. J. Patch, New Bedford, Mass.; H. W. Page, Kalamazoo, Mich.

Lowell & Andover.—At the annual meeting in Lowell, Mass., February 10, Frederick Ayer, J. C. Ayer, George Ripley, G. V. Fox, J. Gates, J. Rogers, J. Nichols, E. M. Sargent, H. J. Adams and S. Tolman were chosen directors. The board elected F. Ayer, President; D. B. Bartlett, Clerk; Benjamin Walker, Treasurer.

Boston & Albany.—At the annual meeting in Springfield, Mass., February 10, the following directors were chosen: Henry Colt, Pittsfield, Mass.; Edward B. Gillett, Westfield, Mass.; Chester W. Chapin, Springfield, Mass.; D. Waldo Lincoln, Worcester, Mass.; Ignatius Sargeant, Ginery Twichell, Brookline, Mass.; George O. Crocker, New Bedford, Mass.; Moses Kimball, Boston.

Central of Georgia.—Gen. G. M. Sorrell, of Savannah, has been chosen a director, in place of John B. Wilder, resigned.

West End Narrow-Gauge.—The officers of this company, formerly the St. Louis & Florissant, are as follows: President, Erastus W. Hill; Vice-President, James L. Schmidt; Secretary, Luther H. Conn; Treasurer, Wm. J. Lewis.

Chicago, Burlington & Quincy.—Mr. Augustus Bauler, for some time past draughtsman of the United States Rolling Stock Company, has been made Assistant Master Mechanic at Aurora, where he was draughtsman for some time before going to the Rolling Stock Company.

Fort Wayne, Jackson & Saginaw.—At the annual meeting in Jackson, Mich., February 9, the following directors were chosen: J. A. Woodhull, Angola, Ind.; C. A. McClellan, Auburn, Ind.; J. H. Bass, John H. Clark, A. P. Edgerton, S. C. Evans, Fort Wayne, Ind.; P. B. Loomis, D. Merriman, W. R. Reynolds, H. H. Smith, W. D. Thompson, E. A. Webster, Jackson, Mich.; E. O. Grosvenor, Jonesville, Mich.

Toledo & St. Louis Air Line.—George C. Chaffee has been chosen President.

New London Northern.—The directors have re-elected Chas. Osgood President and Robert Coit Treasurer.

Schuylkill Navigation.—At the annual meeting in Philadelphia recently Frederick Fraley was re-elected President, with the following managers: John N. Hutchinson, Charles W. Wharton, George Brooke, Charles Baber, Camille D'Inville, Michael Ward. The board elected Richard Wilkins Secretary and Charles W. Bacon Treasurer.

Seattle & Walla Walla.—At the annual meeting, January 11, the following directors were chosen: L. B. Andrews, W. N. Bell, J. M. Coleman, John Collins, A. A. Denny, B. Gatzert, G. I. McKenney, J. McNaught, F. Matthias, F. B. Morris, Wm. Renton, H. L. Yesler.

Huntingdon & Broad Top.—At the annual meeting in Philadelphia, February 2, B. Andrews Knight was chosen President, with the following directors: R. Wilson, C. D'Inville, John Devereux, Wm. Cummings, L. V. Williamson, James Long, C. W. Wharton, Wm. Whittaker, J. H. Trotter, D. J. Morrell, Wm. F. Jenks, John B. Wood.

Atlantic & Gulf.—Mr. C. D. Owens has been appointed to the position of General Agent of this company, vice Mr. Chas. W. Harwood, who will continue as Contracting Agent in New York.

Pennsylvania Canal.—At the annual meeting in Harrisburg, Pa., recently, Mr. Isaac J. Wistar was re-elected President, with the following directors: Thomas A. Scott, G. B. Roberts, Wistar Morris, Josiah Bacon, William Anspach, Joseph Dulles, Charles Parrish, John P. Steiner, Samuel M. Felton, Strickland Kneass, Edmund Smith.

Mount Sterling.—The name of the Chief Engineer of this projected road is R. H. Fitzhugh, and not R. H. Fitch, as it was incorrectly printed in a recent notice of the company.

West Jersey.—At the annual meeting in Camden, N. J., February 9, the following directors were chosen: Thomas Jones York, Thomas H. Dudley, Camden, N. J.; Samuel A. Whitney, Glassboro, N. J.; Charles E. Elmer, Salem, N. J.; Coleman F. Leaming, Cape May Court House, N. J.; Lewis Mulford, Millville, N. J.; John M. Moore, Clayton, N. J.; Albert W. Markley, Strickland Kneass, Josiah Bacon, George B. Roberts, Samuel M. Felton, George Wood, Philadelphia. The new directors are Messrs. Markley and Felton, who replace H.

J. Mulford and S. T. Bodine. The Board elected George B. Roberts President in place of T. J. Yorke, who declined a re-election, and re-elected George J. Robbins Secretary and Treasurer for the tenth year.

Marietta, Pittsburgh & Cleveland.—At the annual meeting, February 9, the following directors were chosen: A. J. Warner, T. W. Ewart, W. P. Cutler, Samuel Shipman, G. W. Davies, Isaac Morton, D. McLaren. The board elected A. J. Warner President; Isaac Morton, Vice-President; Samuel Shipman, Treasurer; J. A. Kingsbury, Secretary.

PERSONAL.

—Mr. Benjamin F. Beckman, a well-known New York merchant who died in that city February 9, was President of the New Jersey West Line Railroad Company and a large owner of its securities. He was also a director in the Twenty-third street and Christopher street railroad companies in New York.

—Mr. T. Jones Yorke has declined a re-election as President of the West Jersey Railroad Company on account of increasing age and infirmity. He has been connected with the company from its first beginning in 1852, and has been President since the death of Commodore Stockton, in 1866.

—Mr. John G. Clifford, Master Mechanic of the Illinois Midland Railroad, was badly bruised and had a shoulder dislocated, February 12, while passing over the road, the car in which he was being thrown from the track by a broken rail.

—Mr. W. H. Thomas, Master Mechanic of the Los Angeles Division of the Southern Pacific Railroad, who had his breast-bone broken and was badly scalded by an accident on the Anaheim Branch some weeks since, is steadily recovering from his injuries.

—The directors of the St. Paul & Sioux City Railroad Company have passed resolutions expressing their regret at the loss of Gen. Samuel F. Hersey, a director of the company, who died recently at Bangor, Me.

—Mr. Alexander Worth, formerly for many years Secretary of the Indianapolis, Cincinnati & Lafayette Railroad Company, died at his residence in Mooreville, Ind., February 10, aged 76 years.

—Hon. Samuel Hoopes, who died in Washington February 14, and who had represented one of the Boston districts in Congress for 14 years, had been for 20 years an active director and large stockholder of the Eastern Railroad Company. He was also a large stockholder in other companies.

Delaware & Bound Brook.—The Engineer in charge of the construction of the First Division of this road is Mr. Herman S. McMinn, and not John McMinn, as was incorrectly stated.

Burlington, Cedar Rapids & Minnesota.—The President and several other directors having resigned, the reorganized board has elected the following officers: President, John I. Blair; Vice-President, S. P. Wisner; Treasurer and Superintendent, W. W. Walker. All these gentlemen are connected with the Sioux City & Pacific and other roads, and the Iowa Railroad Land Company.

Delaware, Lackawanna & Western.—Mr. W. K. Niven has been appointed Assistant Superintendent of the Morris & Essex Division.

ANNUAL REPORTS.

Philadelphia, Wilmington & Baltimore.

This company owns and operates a line from Philadelphia to Baltimore, 95½ miles, with the New Castle Branch, 5½ miles, and the Port Deposit Branch, 3½ miles, 104½ miles in all. It works under lease the New Castle & Frenchtown road, 6 miles, and it also works the Delaware Railroad, whose report is made separately.

The equipment with which this property is worked consists of 72 engines, 95 passenger, 4 chair, 15 baggage and smoking, 7 baggage and mail, 2 postal, 19 baggage, 14 express and 3 milk cars; 617 box, 73 stock, 346 platform, 50 lime, 94 dump cars and 80 four-wheeled lumber trucks; 1 pay, 5 tool, 2 crane, 1 truck, 3 construction cars, 1 snow-plow and one street-sweeper; a total of 159 passenger train, 1,260 freight train and 14 service cars. Of the passenger-train cars 24 are mounted on six-wheel trucks.

The property is represented by the following securities:

Stock (\$109,755 per mile).....	\$11,534,250
Funded debt (\$20,971 per mile).....	2,262,000
Ground rents.....	10,000
Total (\$130,821 per mile).....	\$13,796,250

During the year \$16,500 of convertible bonds were exchanged for stock. The company holds \$150,000 New Castle & Frenchtown stock besides \$1,458,413.14 in other stocks and securities.

During the year payments amounting to \$163,922.07 were made from the renewal fund, of which \$112,500 was for four spans (1,000 feet) of the Susquehanna bridge. Contracts have been made for eight more iron spans for that bridge to be erected at the option of the company at any time before 1878. New iron bridges have been built at Stanton and Trainer's. During the year 2,100 tons of steel rails were laid at a cost of \$242,000 and \$28,970 was expended for new equipment.

The earnings of the road for the year ending October 31 were as follows:

From passengers.....	\$1,747,083.16
Freight and express.....	1,011,108.87
Rents.....	10,669.43
Mails and miscellaneous.....	107,326.18
Total.....	\$2,876,187.64

New Castle & Frenchtown:	
From passengers.....	\$26,799.79
Freight.....	42,275.91
Mails.....	1,018.54
Total.....	70,094.24

Total earnings.....	\$2,946,281.88
Expenses, Philadelphia, Wilmington & Baltimore.....	\$1,730,073.78
New Castle & Frenchtown.....	46,992.21
Total.....	1,777,065.99

Net earnings.....	\$1,169,216.09
Profit from Delaware Railroad.....	1,404.28
Total net earnings.....	\$1,170,620.37

Interest account, balance.....	\$126,809.91
Dividends, 8 per cent.....	921,220.00
Placed to credit of renewal fund.....	100,000.00
Total.....	1,148,029.91

Balance to credit of revenue account.....	\$22,611.06
Balance, October 31, 1873.....	518,052.24
Total.....	\$540,663.30

The report says: "The gross receipts, compared with those of 1873, show a decrease of \$217,627.37, or about 7 per cent, while the operating expenses were less than those of 1873 by the sum of \$265,263.91, or about 18 per cent, including taxes in both cases; but the taxes for 1874 were heavier than those of 1873 by \$4,146.50, or about 5 per cent.

"The decrease of receipts was due solely to diminished freight, express and miscellaneous business, as the passenger receipts were in excess of those of 1873 by \$16,208.73, or about 1 per cent, and we were paid for mail service \$7,193.91, or about 17 per cent, in excess of the mail pay of 1873.

"The decrease in freight receipts was not so much due to diminished tonnage moved as to the low rates at which we moved it, and the whole diminution of tonnage was in those classes of freights which demand more than average speed and care, and consequently pay the higher rates. The movement of peaches was about one-half as large only as it was in 1873, and less than one-fourth of that of 1872. And, as a consequence of the mildness of the winter of 1873-74, uninterrupted water communication was maintained between Philadelphia, Wilmington and Baltimore, and we were not called upon to transport any freight on account of any inability of canal and river lines to take it."

The gross earnings were \$26,543, and the net earnings \$10,534 per mile worked; the operating expenses were 60.31 per cent. of earnings. The train mileage on the main line and Port Deposit Branch was 1,370,913 miles; the company's engines ran 338,458 miles on the Delaware Division, making a total of 1,709,371 miles.

Concerning the postal-car controversy the report says: "In our last annual report we informed the stockholders in respect to the very insufficient pay for mail service received by this company. During the past year, persistent exertions were made by your executive officers to obtain reasonable compensation from the Post-Office Department. The probability of success in this direction seemed at one time so remote that it was decided to let to parties other than the Post-Office Department all of our post-office cars, to be used for the transportation of express matter and fast freight, for either of which uses we should have received for the car-service at least double the amount paid us by the Post-Office Department. But at this juncture, changes took place in the administration of the Post-Office Department, and it was deemed due to the Post-Master General elect to await his assumption of the duties of his office and his action in regard to our claims. The result, we think, thus far justifies this course. It has been already stated that our mail receipts in 1874 exceeded those of 1873 by about 17 per cent., and we may add that with the assent of the Post-Master General, the weight of mails moved in November and December, 1874, and in January, 1875, is to be used as a basis of adjustment of our mail pay, to take effect from the first of July last. We are moreover encouraged to hope that our position in relation to mail service will, after so many years of faithful work performed for the Post-Office Department at a large loss to this company, be improved by a revision of the postal laws during the present session of Congress—a measure recommended by the Post-Master General in his recent annual report, which recommendation was approved by the President in his last message."

Boston & Albany.

This company owns a line from Boston, Mass., to Albany, N.Y., 201.65 miles; the Grand Junction road from Brighton to East Boston, 9.3 miles; the Brookline Branch, 1.55 miles; the Newton Lower Falls Branch, 1.1 miles; the Saxonville Branch, 3.7 miles; the Milford Branch, 12 miles; the Milbury Branch, 3 miles; the Hudson Branch, 17.33 miles—in all 249.63 miles owned. It leases the Pittsfield & North Adams road, 18.65 miles, and the Ware River road, from Palmer to Winchendon, 49 miles, making 67.65 miles leased and 317.28 miles worked. The Ware River road was leased in January last, being then just completed.

The property owned is represented as follows:

Stock (\$79,574 per mile).....	\$19,864,100
Bonds (\$22,225 per mile).....	5,558,000
Total (\$101,799 per mile).....	\$25,422,100

The bills payable amounted at the close of the year to \$1,746,949.75. The contingent fund was \$1,618,882.05 and the accumulated sinking fund, \$1,677,912.33. The report says: "The necessities of the current year, to insure the completion of works now in progress, and in contemplation and to meet \$665,000 of Western Railroad bonds falling due on the 1st of October next, can only be met by temporary loans, or by a further issue of bonds or stock. Besides the bonds above referred to, we have now outstanding \$5,000,000 of 7 per cent, 20-year bonds, and \$103,000 Albany bonds due in 1876. For the payment of the latter, there is a sinking fund which, today, exceeds the bonds by about \$30,000. The 20-year bonds were issued under the general law of the Commonwealth, and in pursuance of your vote passed November 2, 1871."

The equipment with which the road is worked consists of 238 engines; 166 passenger and 47 baggage and postal cars; 4,562 freight and 509 other cars. The company also owns 98-234 parts of the New York & Boston Express Line.

The total cost of the road and equipment up to the close of the year was \$27,738,686.15, or \$111.19 per mile.

The work of the year ending September 30, 1874, was as follows:

	1873-74.	1872-73.
Train mileage.....	5,69,790	5,661,554
Passengers carried.....	5,889,382	5,757,624
Passenger mileage.....	122,063,286	120,662,569
Tons of freight carried.....	2,668,403	2,884,520
Tonnage mileage.....	290,679,369	317,670,752
Barrels flour carried to Boston.....	1,149,087	1,116,079
" " " local points.....	894,657	847,428

The increase in passenger mileage was 1.2 per cent., and the decrease in tonnage mileage, 8.5 per cent. Of the tonnage mileage, 48.5 per cent. was of through freight between Albany and Boston, and of that through freight 85.4 per cent. was eastward bound. The average cost of transportation of each passenger and ton of freight was 1.614 cents per mile, against 1.725 cents in 1873.

The earnings and expenses of the road for the year were as follows:

	1873-74.	1872-73.
Earnings from passengers.....	\$3,015,376.86	\$3,011,562.19
Freight.....	5,283,599.21	6,231,183.27
Mails and other sources.....	664,151.80	565,287.07
Total earnings.....	\$8,963,127.87	\$9,798,032.52
Operating expenses.....	6,548,211.63	7,561,169.63

Net earnings.....	\$2,414,916.19	\$2,236,872.89
Gross earnings per mile.....	\$29.387	\$36.550
Net " " " ".....	79.18	83.47
Per cent. of expenses.....	73.06	77.17
Earnings per passenger per mile.....	2.47 cts.	2.50 cts.
" " " ton per mile.....	1.82	1.96

The decrease in earnings was \$834,904.65, or 8½ per cent.; the decrease in expenses, \$1,012,947.95, or 13½ per cent.; the increase in net earnings, \$178,043.30, or 8 per cent.

The expenses were divided as follows:

Repairs of road (24.0 per cent.).....	\$1,571,701.10
" engines (9.2 per cent.).....	69,487.73
" cars (9.4 per cent.).....	612,507.60
" buildings and ferry (1.6 per cent.).....	106,577.60
Transportation expenses (53.8 per cent.).....	3,823,040.76
General expenses (2.0 per cent.).....	184,621.42
Total.....	\$6,548,211.63

The income account was as follows:

Net earnings.....	\$2,414,916.19
Surplus from previous year.....	3,265,899.99
Additions to sinking fund.....	10,442.38
Premium on bonds sold during year.....	36,251.51
Premium account close of last year.....	226,795.59
Total.....	\$5,954,295.65

Interest paid.....	\$341,554.71
Dividends, 10 per cent.....	1,986,410.10

Pittsfield & North Adams dividend, 6 per cent.....	27,000.00
Ware River rental, 5 per cent.....	37,800.00—2,392,464.18

Surplus at close of year.....\$3,569,831.47

The report says: "The permanent improvements which were in progress at the commencement of the year have been carried forward to this time with such economy as the changed condition of things justified, and our property and facilities for business are now so ample that comparatively small outlays will be required in the immediate future. Taking advantage of the great reduction in the price of steel rails, we have laid in our main track during the past year about 13,000 tons; 10,000 tons more will give us steel in both main tracks from Boston to Albany; and it is submitted that the favorable rate at which steel can now be had should be taken advantage of to complete this work."

"We have steadily prosecuted the work upon our depot at Worcester, the elevator at East Boston, and the new track and roadway at Russell; and have also built, since making our last report, about 800 feet of iron bridges. It may be desirable to replace during the coming season some 400 feet of wooden bridges with iron; and whenever business shall again revive, the work of substituting stone or iron for wood should be carried forward until none but permanent and indestructible structures shall be found upon our road. By the addition of new locomotives and cars, we have more than made good all depreciation in that department."

"The filling of the flats on the Back Bay, bought of Nathan Matthews, has been completed, and the side tracks for switching and making up trains built thereon, are now in daily use. That portion of the land lying on the north side of our main track, containing about 550,000 square feet, it is believed, will, at no distant day, afford a most eligible and central site for a passenger depot. Very little has been done on the flats at South Boston. We have, however, entered into a contract with the State, the city of Boston, and the Boston Wharf Company, by which these flats will be connected with the business portion of the city by new streets, and two substantial bridges over Fort Point Channel. The manner in which we shall reach these flats with our tracks is as yet undetermined. A company has been formed for the purpose of connecting them with the roads on the south and west sides of the city, and if this enterprise is carried to completion, it is believed that by means of their road we may reach our property at that point with advantage to ourselves and to the new company."

"By a compromise with the city authorities of Springfield, an arrangement has been entered into, by which Chestnut street has been carried under the railroad."

The directors do not anticipate any lasting injury to the company from the opening of the Hoosac Tunnel Lane, but rather a future benefit from the general growth of through business and the increased prosperity of Boston.

North Pennsylvania.

This company owns a road from Philadelphia north to the Lehigh Valley at Bethlehem, 56 miles, with branches to Doylestown, 10 miles, and to Shilohville, 2 miles, 68 miles in all. It works under lease the Northeast Pennsylvania road, from Abington to Hartsville, 9.8 miles, and the Stony Creek road from Lansdale to Norristown, 10 miles. The accounts of these are stated separately.

The balance sheet of the Treasurer shows that the company is clear of floating debt, with a balance of cash and cash assets at the close of the year amounting to nearly \$1,000,000. The convertible privilege continued in the 6 per cent. mortgage bonds of the company expired December 31, 1874. The total amount converted into capital stock was \$243,000, which, with the bonds previously cancelled on account of the sinking fund, reduced the amount from \$2,500,000, originally issued, to \$1,950,500 outstanding on that date. A dividend of 5 per cent. out of the year's earnings has been declared and paid since its close.

The earnings and expenses for the year ending October 31 were as follows:

	1874.	1873.
Earnings from passengers.....	\$505,916.89	\$493,146.30
Freight.....	560,974.23	611,835.71
Coal.....	3,932.38	351,998.06
Mails and miscellaneous.....	28,046.68	20,500.04

Total earnings.....	\$1,424,469.18	\$1,477,540.08
Operating expenses.....	829,735.63	931,678.90

Net earnings.....	\$594,733.55	\$545,861.18
Gross earnings per mile.....	\$20.948	\$11.729
Net earnings per mile.....	8.746	8.229
Per cent. of expenses.....	60.35	69.00

The decrease in earnings was \$53,076.90, or 3.6 per cent.; the decrease in expenses, \$101,848.27, or 10.9 per cent.; the increase in net earnings, \$48,771.37, or 8.9 per cent. The number of passengers carried was 1,032,859, an increase of 68,136.

The operations of the Northeast Pennsylvania were as follows:

Earnings (\$3.025 per mile).....	\$18,149.82
Expenses (77.96 per cent.).....	13,180.19

Net earnings (\$667 per mile).....	\$3,999.43
Interest and taxes.....	12,585.71

Deficiency.....	\$8,586.28
-----------------	------------

The extension of the road from county line to the Bristol road, near Hartsville, 3.8 miles, has been completed, and was opened for use November 1, 1874, since which date four daily passenger and freight trains have been run between Philadelphia and Hartsville station.

The Stony Creek road was opened for business January 1, 1874, and the operations for the ten months were as follows:

Earnings (\$1.654 per mile).....	\$16,544.37
Expenses (86.98 per cent.).....	14,721.64

Net earnings (\$182 per mile).....	\$1,822.71
Interest and taxes.....	21,140.48

Deficiency.....	\$19,317.77
-----------------	-------------

The disposition made of the net earnings was as follows:

Taxes.....	\$38,790.87
Balance of interest account.....	322,737.08
Balance carried to profit and loss.....	233,269.60
Total.....	\$594,737.55

The great reduction in the cost of steel rails has afforded a favorable opportunity of substituting steel in the place of iron in the renewal of tracks on the main line; one thousand tons have been contracted for for that purpose and a part of them have been delivered.

The construction of the new line to New York is progressing favorably, as noted last week.

Rewards for Saving the Lives of Cattle.

The Indianapolis Journal says: "The Evansville & Crawfordville Railroad gives prizes to its engineers who kill the smallest number of cattle to the miles run. Mr. Linxweller received the prize of \$100 for 1874, he having run 28,296 miles without killing anything, something that has never before been done during the history of the road. The second prize of \$50 was awarded to John Wagner, of Terre Haute. He ran 29,702 miles, and during the year killed one horse, a cow and two hogs. Of the twelve engineers on the road, the one who ran the largest number of miles, was John G. Paine, of Evansville, who ran 55,829 during the year."



Published Every Saturday.

CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

CONTENTS

ILLUSTRATIONS:	Page	GENERAL RAILROAD NEWS:	Page
Summer Station, P., W. & B.	71	Annual Reports.....	73
R. R.	71	Traffic and Earnings.....	77
EDITORIALS:		The Scrap Heap.....	77
The Erie Report.....	74	Old and New Roads.....	77
The Conflict.....	74	MISCELLANEOUS:	
Chicago Traffic.....	75	The Railroad War.....	71
Record of New Railroad Con-		Transportation in Congress..	72
struction.....	76	The Civil Engineers' Report	
EDITORIAL NOTES.....	76	on Rapid Transit in New	
GENERAL RAILROAD NEWS:		York.....	78
Elections and Appointments.	72	Train Accidents in January..	79
Personal.....	73		

Editorial Announcements.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns our own opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

THE ERIE REPORT.

The report of the Erie Railway Company to the State Engineer and Surveyor, for the year ending September 30, 1874 (which has just been issued in full by the company), is notable for some efforts to make plain some facts which it is not usually easy to learn from such reports. It follows generally the form required by law for the report to the State Engineer and Surveyor of New York, which has some excellent points, but is quite ambiguous on some points, antiquated on others, and could at best only be made effective and accurate by the unremitting attention of an officer with authority to call for explanations and corrections. Indeed, without such personal official supervision, which seems not to be contemplated, provided for, or even authorized by the New York law, official reports will never be accurate and trustworthy. It is encouraging to see a company's officers taking pains to remedy the defects of the law.

The first improvement that we notice in the Erie statement is in the capital account. It might seem impossible to be ambiguous in a statement of the amount of a company's bonded debt, but it is, and it is even somewhat difficult to determine how it should be stated, when, as is the case with the Erie and many other American companies, the debts are payable in three kinds of money. It has bonds with interest and principal payable in American currency, in American gold and in sterling currency. Recently it was the universal practice to reckon the pound sterling at \$4.44 4-9 in American gold, though a high premium had to be added to make an exchange at this rate. For a little more than a year the law has recognized the gold value of the pound to be \$4.8665. Reckoning at these different rates would make a difference of nearly a tenth in the amount of a sterling debt. Then, as all gold interest (and principal if it falls due before the resumption of specie payments) must be paid from currency net earnings, a further complication ensues, and the amount of the debt in the currency which alone the company receives as earnings must be further increased by a sum which varies from day to day with the discount on the currency, or the premium on gold as we call it. The Erie Company, we believe, reports its sterling gold debts with the present legal valuation of the pound (\$4.8665); but it has made perfectly plain and simple the understanding of the current charge of the whole funded debt on the company's resources by taking the sums of currency actually necessary to pay the interest on all gold bonds and adding them to the interest on the currency bonds to find the gross annual currency interest charge, which, divided by the total amount of the bonds gives the actual average currency

interest, which is 7.5-14 per cent. This seems a high rate, but then in many cases the face of the bonds is much less than the currency realized or represented by them. A gold bond for \$1,000, bearing 7 per cent. interest, would be worth at par \$1,146. Reporting the bond at its face value, the currency interest would be a little more than 8 per cent. It would add to the value of this report to have given a detailed statement of the different issues of bonds, and one of the gross amount of currency necessary at the close of the year to pay them. The latter would be a true statement of the company's funded debt in terms of the currency which it receives for its services and pays out for working expenses, but of course would vary from day to day with the premium on gold. A company which has a debt of ten millions gold falling due to-day must have \$11,462,500 of the money which it earns in order to pay it, and the statement of the face of the bond simply does not give an adequate idea of the debt of the company, any more than the statement of the interest in gold gives an adequate idea of the demands made to pay the interest. The form of report required by the State, however, gives no place for such a statement, having been drawn when, apparently, there were no sterling debts, and when such a thing as a depreciated currency did not need to be provided for.

The progress of the company's capital account during the year is shown below:

	1873-74.	1872-73.	Inc. or Dec.
Capital stock.....	\$96,536,910	\$96,536,910	Inc. \$0
Funded debt.....	45,576,814	31,917,143	Inc. \$13,659,671
Floating debt.....	2,552,203	2,714,103	Dec. 161,900
Total.....	\$134,665,927	\$127,168,156	Inc. \$7,497,771
Average rate of interest, 7 5-14 p. c.			*7 per cent.

* Doubtless inaccurate if reckoned in currency.

In the credit side of the capital account, the "cost of road and equipment," a re-distribution is made of the items reported by Mr. Watson for the year ending with September, 1873, adding \$135,437 for "Land, land damages and fences," \$113,250 for "Water transportation in New York Harbor," and \$5,919 for "Engineering and agencies," and lessening by that amount the amount charged for that year to "New York & Erie Railroad and Erie Railway and franchises," but making no change in the totals.

The additions for last year are reported to be:

For graduation and masonry.....	\$899,360.13
Superstructure, including iron.....	359,485.45
Bridges.....	262,388.61
Stations, buildings and fixtures.....	225,920.48
Engine and car-houses, machine shops, machinery and fixtures.....	55,313.79
Land, land damages and fences.....	131,730.47
Locomotives and fixtures and snow plows.....	76,582.46
Passenger and baggage cars.....	95.79
Freight and other cars.....	656,362.36
Water transportation New York Harbor.....	169,765.49
Engineering and agencies.....	71,414.95
Pavement and Twenty-third street ferries.....	547.63
New York & Erie Railroad and Erie Railway and franchises.....	5,921.06
Total.....	\$3,445,808.61

Total cost of road and equipment, Sept. 30, 1874.....	\$115,075,900.87
Idem, Sept. 30, 1873.....	111,630,692.26

In this report for the first time, we believe, can be found an intelligible account of the lines owned and worked by the company. The form given for the report of miles to the State Engineer and Surveyor is a singularly blind one, which many companies, apparently, are unable to understand, if we may judge by the way the report of mileage is filled—frequently in such a manner that it is impossible to reconcile one part of it with another. In this report of the Erie the information for which the form of the State report provides but four or five places for figures is given in a double-page table of ten columns, in which is given the mileage of "first track," "second track," "side track" and "third rail" separately for each division, separately for main line and each branch in each division, with the further statement of the tenure by which each part is held by the company; and it gives for the first time of late years an accurate statement of just what constitutes the railroad property of the Erie Railway Company. We have consolidated this table below. It is prefaced by a statement that of the 459 miles of main line from Jersey City to Dunkirk, 30.12 is in New Jersey, 386.83 in New York, and 42.05 in Pennsylvania. The following is our summary of the statement of mileage:

	Main Line.	Branches.	Total.
First track.....	459.00	0.00	459.00
Second track.....	166.75	39.60	206.35
Side track.....	182.08	135.21	317.29
*Third rail.....	43.80	*70.50	114.30
Total mileage of track.....	922.73	708.06	1,637.79

* In the totals third rail is divided by two to obtain its equivalent in single track.

The division of the track according to ownership is as follows:

	Main Line.	Branches.	Total.
Owned.....	429.85	96.75	526.60
Leased.....	30.95	342.75	373.70
First track.....	429.85	96.75	526.60
Second track.....	235.80	8.00	243.80
Side track.....	47.04	27.26	74.30
*Third rail.....	43.80	70.50	114.30
Total.....	832.79	501.50	1,334.29

In connection with the description of the separate parts of the road, the tenure by which it is held—whether owned, leased or worked by some other agreement than a lease—is given in the report, but no statement of the totals owned, worked and leased like that above, which we have compiled from the report, is given: It seems to us to present the strength of the company in a favorable light; for

the property owned by the company is by far the most valuable part of the whole property, not simply in extent, but vastly more in productiveness. Of 959 miles of road worked it owns 524.8 miles—54.7 per cent. of the whole; but of the 1,637.79 miles of track worked 964.8, which is 58.9 per cent. of the whole, is owned by the company. The main line from Jersey City to Dunkirk is all owned except 31 miles out of Jersey City; and 80 of the 91 miles which gives the Buffalo outlet (now the true main line) is owned.

The report for the previous year gave five miles less of branches, and an altogether different statement of the other tracks, filling the requirements of the State report, but indefinite and unintelligible, second track and sidings being given together, and 179 miles of "track at stations" being reported in addition. By the last report the total mileage of track is greater by 111 miles.

In our issue of December 19 last we gave a summary of the report of earnings and expenses for the year, which was before that time rendered to the board of directors. We will here only remind our readers that the gross receipts were \$18,598,898, the working expenses \$13,563,738, and that of the \$5,035,160 of net earnings, \$4,005,900 was required for interest and rentals leaving a surplus of \$1,029,260, against \$2,946,685 reported for the previous year.

There is added to the statement of the number of engine houses (44) the fact that they have stalls for 321 engines—which adds certainly to the definiteness of the description.

In giving the number of locomotives owned by the company, it has been necessary to make a peculiar statement, in order to harmonize with the previous report. Captain Tyler reported, as we noticed, that more than thirty locomotives of the number which had been reported could not be found: they had been worn out, but their numbers retained on the books. So this report heads the account by "Number of locomotives on the books of the company," and after 301 "in good condition," 102 "in fair condition" and 66 "in bad condition" we have the entry "Broken up, 36." The number of locomotives was reported as 497 the previous year, being actually 461 it appears, and at the close of the last year 469. Making this correction and taking the numbers of cars from the reports of the two years we have the following statement of rolling stock:

	1873-74.	1872-73.
Locomotives.....	469	461
First-class passenger cars.....	209	250
Second-class and emigrant cars.....	69	44
Baggage, mail and express cars.....	75	81
Freight cars (rated as 8-wheel).....	10,776	10,373

Thus there seems to be a falling off of one-fifth in first-class coaches, but half of this number is accounted for by the increase in second-class and emigrant cars, and there is a considerable addition (402 cars) to the freight stock.

We shall not be able to compare the train mileage of the two years, for a note to the freight-train mileage tells us that "It may be observed that the mileage of the current fiscal year is less than that of the preceding one; this is the result of a more accurate system of keeping that account since September 30, 1873, than had been previously in use." The apparent decrease is only 2 per cent., however. As for the work done, we give it for three years, as follows:

	1873-74.	1872-73.	1871-72.
Passengers carried.....	4,223,130	3,922,156	3,698,998
Tons of freight carried.....	6,364,276	6,312,702	5,664,274
Passenger mileage.....	160,204,125	164,633,424	156,143,351
Tonnage mileage.....	1,047,420,235	1,032,986,899	950,708,902

Here we see an increase every year in the number of passengers and tons of freight carried, but the amount of traffic does not increase in the same proportion, or even decreases in one case, there being evidently a larger proportion of local or short traffic. Thus, last year there was an increase of nearly 8 per cent. in the number of passengers, but a decrease of nearly 3 per cent. in the passenger mileage. It is noticeable, however, that there was an increase (a very small one, to be sure—1 1/2 per cent) in the tonnage mileage, notwithstanding the great depression in business.

The decrease in earnings results from the decrease in the average charges on freight, which fell from 1.454 to 1.312 cents per ton per mile, the average passenger charge having risen from 2.218 to 2.313 cents per mile.

The report, in accordance with the requirements of the law, distributes the expenses between the passenger and the freight traffic. The freight expenses are given as 69 1/2 per cent. of the receipts; the passenger expenses as \$300,000 more than the passenger receipts. As the entire working expenses are included in these two heads, however, it is only fair to add to the receipts from passengers proper those earned by passenger trains for mails, express, etc. If we do this we have a margin of \$628,000 as profit from passenger trains, and the proportion of expenses to earnings was 86 1/2 per cent. At this rate the earnings, expenses and profits, in cents, per passenger and ton carried one mile for the two years were:

	Passenger Mile.		Ton Mile.	
	1873-74.	1872-73.	1873-74.	1872-73.
Receipt.....	2 313	2 218	1,312	1,454
Cost.....	2,001	1 993*	0 913	1,036
Profit.....	0 312	0 225	0 399	0 418

* This cost was given inaccurately in two articles in this paper last spring, the report of passenger expenses not having been published then.

The apparently trifling decrease in the profit on the

freight rate of nineteen thousandths of a cent per ton per mile reduced the net profits on freight by just about two hundred thousand dollars, and with the average rate as high last year as the year before, the profit would have been about a million and a half greater. The decrease in the cost of carrying it was just 10 per cent.; the passenger rate meanwhile was greater by $4\frac{1}{2}$ per cent., and the cost by 1 per cent., leaving the profit greater by nearly 40 per cent., but still a mere trifle (only $2\frac{1}{2}$ mills per mile).

The New York law requires a statement of the tonnage of every kind of freight under eight heads. Strangely enough it omits minerals altogether, and usually coal is included under the head of "other articles" at the foot of the list. In this report the Erie has ventured to interpolate the item of "mineral coal," and it forms just about 60 per cent. of the total tonnage—showing clearly the fact that the Erie has become an important coal road. The year previous the proportion of coal was even greater—62 per cent. Something more than 17 per cent. of the last year's tonnage is in agricultural products— $12\frac{1}{2}$ per cent. "vegetable food" (grain chiefly) and $4\frac{1}{2}$ per cent. "animals." The proportion of tonnage-mileage of these staples is doubtless considerably larger, as most of these shipments pass over the entire length of the road.

The report closes with a tabular statement of accidents for the year, in which again some facts not called for by the law are presented, and that in such a way as to have real value. This table, which we hope to be able to copy soon, divides the accidents into two great classes, "Accidents common to passengers, employees and others," and "Accidents to employees and others not passengers." Under the first head are the subdivisions "On trains in motion" and (which may seem unaccountable, but one person was killed and 19 were injured by such accidents) "On trains at rest." Under the second head the subdivisions are "Pertaining to the trains," "Pertaining to the track," and "Miscellaneous," the different kinds of accidents being specified in the subdivisions. Of the 98 persons killed and 945 injured 42 of the killed and 268 of the injured were employees, and only one killed and 19 injured were passengers. More than half of the killed (55) were neither employees or passengers, and were chiefly trespassers, doubtless.

This document is, as we have said, made in accordance with the requirements of the laws of New York, and the title page states it to be a report "under the act Chapter 140, Laws of New York, 1850." It is not a model report, and there is not a word of text in it—only tables and nothing more; but it indicates a model disposition, if we may say so, to answer the requirements of the spirit as well as the letter of the law, and even to make plain what the law has left ambiguous or insufficient. We may say here that the law ought to be modified so as to be suited to the circumstances of railroads as they are, not as they were a quarter of a century ago. It is true, doubtless, that such reports will always be in many cases imperfect, and on the whole untrustworthy, unless there is a man behind the law with the knowledge, time, and authority to understand the reports, analyze them, and insist on completeness and accuracy in them; but it ought at least to be possible for companies to make good reports by filling up the blanks furnished them, and it is not now.

THE CONFLICT.

The Baltimore & Ohio and the Pennsylvania railroad companies have for many years been in an attitude much like that of two great neighboring nations traditionally hostile, as Great Britain and France used to be. Most of the time there is no actual conflict, but there is always bitter hostility, which is made evident in many ways, and at almost any moment and frequently on what seems trifling pretexts, may break into open war. The two companies are competitors for traffic over a great extent of country, and they have often constructed or otherwise secured branches and extensions which seemed to be useful rather as a check on each other than as directly profitable. The Baltimore & Ohio being the southernmost line, and till recently the only line from Washington northward, was the first to catch business from the South; but a few years ago the Pennsylvania managers organized a company which for some time threatened to deprive the Baltimore & Ohio of nearly all Southern connections, and collect the traffic on the new Baltimore & Potomac road, which is controlled by the Pennsylvania. The Baltimore & Ohio early secured a route to Cincinnati, which is nearly due west of Baltimore, and of late years, later than its rivals, has been working for connections with the Northwest, the great source of traffic in this country. Last year it completed its line into Chicago and became able to conduct traffic from that city to Baltimore without consulting any intermediate company. It completed this road at a time when traffic was light without example of late years, and when the older lines into Chicago, which had recently greatly increased their capacity by improvements, were suffering for want of business, and of course more than usually eager to get it. The new line of course had its

business to create largely, as nearly every new line has, and it was probably good policy for the Baltimore & Ohio to make unusual efforts to get business and to care more for getting business than for making any profit on it just at present. It would not consent to an agreement to fix rates as high as would have been preferred by its competitors, and they, at least the Pennsylvania, assert that it has not kept the agreement which it did make, and at last these two companies have apparently decided to devote their energies to doing each other as much harm as possible, exactly as two nations do when they go to war after having failed to settle their differences by negotiation.

As to the strength of the two parties respectively in a contest of this kind, in which rates are reduced to figures which are unprofitable and for the purpose of making them unprofitable, the question is more difficult than most people think. The Pennsylvania has many times the largest traffic, the most connections, and the most and most important outlets; it earns a great deal the most money, and is in every way a larger corporation. But in a duel of this kind, in which two companies carry at a loss until one of them can stand it no longer, that company is hurt most which has most of the unprofitable business. If the Pennsylvania carries ten million and the Baltimore & Ohio five million tons of competitive traffic at an average rate of three dollars a ton and an average cost of two dollars, then doubtless the Pennsylvania is the strongest company, making a profit of ten millions to the Baltimore & Ohio's four millions. But when in a war of competition the average rate is put down from three dollars to a dollar and a half, and there is consequently an average loss of half a dollar a ton, then the Pennsylvania becomes the weaker company, for it loses five millions while the Baltimore & Ohio loses but two. The decision as to strength depends upon the proportion of the traffic of each company which will have to be carried at the unprofitable rates.

This is a question which it is very difficult to settle beforehand. The Baltimore & Ohio having no Eastern outlet except Baltimore, while the Pennsylvania reaches Baltimore, Philadelphia and New York, the whole effect of the reduction will be felt only on Baltimore traffic, but the effect will be very great also on the other Eastern traffic, for with a very great difference nearly all the heavier freight would go to or come from Baltimore by sea, and the traffic of the other cities would fall off immensely. On the other hand the Pennsylvania has much the largest local traffic, and is now in a situation to command most of the passenger traffic from New York to Washington and southward, as it has the only road from New York to Philadelphia. The Baltimore & Ohio is forced to be its patron for rail traffic to and from New York and New England, and the earnings of this part of the road would be comparatively unaffected.

But the amount of losses as well as the profits on traffic depend on the cost of carrying as well as the pay received. We cannot say exactly what the difference in expenses of transportation is to the two companies; but we know from the Pennsylvania's report that its expenses per ton and per passenger per mile are among the lowest in the country. The Baltimore & Ohio gives no figures from which we can ascertain the cost of doing any given amount of work on its lines, but as it has very heavy and long grades and a much lighter traffic, it is altogether probable that its expenses per unit of through traffic are greater than the Pennsylvania's.

In 1873, on the latter road the cost per ton per mile was 0.857 cent, and the profit 0.558 cent. If the average rate during the contest should be 0.75 cent per ton per mile, and the cost to the Baltimore & Ohio is 1.00 cent, then its losses on the same amount of traffic would be nearly three times as great as the Pennsylvania's. This is enough to show that the problem is a very complicated one, with a large number of unknown or but partly known quantities, and that it cannot be solved off-hand by a reference to the ordinary earnings and interest accounts of the two companies.

The Baltimore & Ohio is materially stronger for the contest because of its small funded debt and the consequently small amount of money which it must pay yearly to keep out of bankruptcy. If two railroad companies were to fight till death, evidently, other things being equal, the one with its capital all in stock would have the advantage over one with half its capital in bonds. The latter would become bankrupt unless its earnings were greater than its expenses; the former might work forever with earnings only just equal to its expenses and preserve the property to its shareholders, though it would be worth nothing to them. Both the companies in question, however, are accustomed to pay their stockholders ten per cent. dividends, and probably there will be a very loud outcry if the contest should result in leaving their stockholders without income, or with one greatly reduced.

Of course the effects of a contest of this kind are not confined to the two immediate parties to it. Almost all the east-and-west traffic will be affected by it, and the consequences if long continued may easily be ruinous to lines in no way identified with either of the chief

contestants. Railroad business was unpromising enough already, and with this complication, which is simply an exaggeration and extension of evils which have been weighing upon railroad business now for many months, the outlook seems dismal enough. It may be hoped, however, that carrying things to extremities may settle the questions at issue both sooner and more satisfactorily than would have been the case otherwise. Meanwhile, the spectacle of two great corporations trying their best to strangle each other, and the whole railroad interest suffering from the struggle, will be apt to lead many to think that whatever the qualifications of the Government for regulating railroad companies, the companies make very bad work of regulating themselves, and all such displays of unreason by the corporations are likely to have a considerable effect in leading politicians and people to attempt remedies which are quite as unreasonable and disastrous.

Chicago Traffic.

The usual publications at the close of the year of the statistics of receipts and shipments of a large city are always interesting, and they are especially so when the city is one like Chicago, with the greatest tonnage of traffic of any interior American city (whatever its importance may be in other respects—a question which we leave for Chicago, St. Louis and Cincinnati to settle). However, to carriers, who look upon trade chiefly with an eye to the business it may give them, the ordinary tables of receipts and shipments scarcely convey a sufficient idea of the bulk of the traffic, representing as the figures do barrels, bushels of three or four different weights, and many other quantities varying from pounds to tons. In the following table we have reduced the quantities given in the table to tons, which will enable us to appreciate at a glance their respective importance as articles of traffic:

Leading Receipts and Shipments at Chicago for 1873 and 1874, in Tons.

	—Received—		—Shipped—	
	1874.	1873.	1874.	1873.
Flour.....	230,152	248,788	224,934	230,349
Wheat.....	992,322	788,087	820,585	733,670
Corn.....	985,021	1,008,402	918,540	1,029,138
Oats.....	205,685	286,220	172,435	251,106
Rye.....	21,167	33,318	9,383	26,908
Barley.....	77,930	101,765	57,715	87,785
Seeds.....	35,817	26,497	20,844	12,881
Broom corn.....	6,695	5,989	5,476	3,354
Cured meats.....	24,612	29,391	135,364	171,993
Beef.....	2,298	716	7,121	3,394
Pork.....	4,098	4,376	23,376	19,114
Lard.....	10,948	13,226	40,917	44,924
Tallow.....	3,792	3,741	1,345	6,498
Butter.....	12,820	11,295	8,148	6,426
Hides.....	24,915	18,443	23,545	10,363
High wines.....	9,067	12,472	11,923	14,135
Wool.....	16,134	17,243	19,053	16,356
Potatoes.....	36,705	33,296	7,930	19,076
Salt.....	91,184	91,211	91,216	81,363
	2,732,323	2,789,387	2,597,632	2,763,809

There is here a decrease of about 2 per cent. in the tonnage of receipts, and of $5\frac{1}{2}$ per cent. in shipments—a progress backwards almost universal last year, but quite new to Chicago, whose business seems normal only when growing rapidly.

All the articles in this table are farm products, except high wines and salt, and all except salt, and perhaps potatoes, are articles which the West exports. Divide the tons by ten, and we have the number of full car-loads.

The grains, as will be seen, are immensely the greatest articles of traffic. Flour, wheat, corn, oats, rye and barley form about three-fourths of the totals here given. We may, however, divide most of the various articles of freight into two general classes, grains and stock products, the latter including butter, hides and wool as well as cured meats, beef, pork, lard and tallow. If we do this we have:

	—Received—		—Shipped—	
	1874.	1873.	1874.	1873.
Grain.....	2,452,287	1,926,530	2,303,542	2,381,956
Stock products.....	101,615	95,482	294,090	381,853

Here the latter is as nothing compared with the former. But the bulk of traffic is very much greater in live stock than in stock products, as we showed recently, in a statement of the Union Stock Yards receipts and shipments for 1874, which were 120,337 and 59,703 car-loads respectively. If these cars had all been full (they probably lacked something of it) this was a tonnage of 1,203,370 received, and 597,030 shipped, the former being equal to one-half of the grain receipts.

But another most important traffic omitted here is the lumber traffic. This is by far the most important branch of traffic from Chicago to the interior. The freight trains to the East are loaded almost exclusively with agricultural products, those in other directions with lumber and merchandise, and with lumber more than anything else. The weight of this lumber we cannot estimate with anything like accuracy, as this article is reported in feet only, and the weight per foot of course varies greatly with the condition of the wood as well as its kind, though as nearly all of it is white pine the latter consideration is not of much importance. Probably, however, it weighs at least half as much as the grain, and as most of it goes out on the roads which bring grain into Chicago, we may say, roughly, that it half loads the grain cars, leaving the other half to depend on merchandise and the stock cars to run back empty, as they usually do.

The receipts and shipments of lumber were as follows,

the boards and timber being given in thousands of square feet, the shingles and lath in thousands of pieces:

	Received.		Shipped.	
	1874.	1873.	1874.	1873.
Lumber.....	1,053,809	1,123,368	594,824	561,544
Shingles.....	605,337	517,923	365,473	407,505
Lath.....	84,942	85,013	40,744	56,288

Another important article of traffic not reported above, is coal. Chicago receives some anthracite coal for distribution to the interior, but its bituminous receipts and by far the largest part of its anthracite are for city consumption. Considerable amounts of bituminous, however, go through the city, coming chiefly from the Chicago & Alton Railroad and going to the more northern lines, which have no mines on their roads. As this is not unloaded in Chicago, it hardly belongs to the trade of the city, but it forms, nevertheless, no inconsiderable item of traffic for some Chicago railroads. Two rolling-mills, with blast furnaces attached, and the considerable and growing manufactures of the city add to the demand for coal largely in ordinary years, but 1874 was not an "ordinary" year, so far as these industries are concerned.

Counting live stock, we would estimate the tonnage of agricultural produce received at Chicago at about 4,000,000 tons for each of the two last years, and the shipments at 3,200,000 in 1874 and 3,350,000 in 1873. If all this transportation was by rail, it would press the Chicago roads hard, but the railroads only get a fraction of the heaviest traffic. The distribution is about as follows:

As to the receipts of agricultural products, they are nearly all by rail and the Illinois & Michigan Canal, the latter counting with the more important railroads as a carrier of corn, but carrying no considerable amount of anything else into Chicago.

The receipts of lumber are nearly all by lake.

The receipts of anthracite coal are wholly by lake, of bituminous (except a little "Erie" coal, as it is called) by rail.

The receipts of salt are largely by lake.

The receipts of merchandise (not specified above) are chiefly by rail, but many coarse goods arrive by lake, where they are carried for a trifle on propellers, which never can get full loads westward.

The shipments of live stock, like the receipts, are all by rail.

Three-fourths of the grain shipments are usually by lake.

The flour shipments are chiefly by rail, as are those of cured meats, though the "lake and rail" route (propeller to Erie and Buffalo and thence by rail) takes a considerable portion at lower than rail rates.

The lumber is shipped entirely by rail and the Illinois & Michigan Canal, the latter ranking among the important routes.

Almost the only one of the articles herein mentioned, which is secure to the railroads as an eastward shipment, is live stock. Although there are a great many other articles which never take the water route between the East and Chicago, there is scarcely any which could not without any injury to the shipment. Thus the railroads have to compete with the lake and canal route for nearly all the traffic between Chicago and the seaboard.

THE NARROW-GAUGE QUESTION seems to have been finally settled, the House Committee of Congress on Railroads and Canals having reported in its favor and set forth its advantages with all the emphasis used by the most ignorant and zealous advocates of it a few years ago. The Committee having disposed of this technical question so readily, we suggest that it still further favor the engineering and railroad profession by determining once for all say the best form and weight of rails, the proportions of locomotives, or the best form of steam railroad for New York city traffic. Doubtless when the news of this Committee's report reaches the Institution of Civil Engineers in London it will hide its head in shame and decree the destruction of that number of its proceedings which records its discussion on this subject, in which so large a majority of the (supposed) able members taking part were unable to see those enormous advantages of the narrow gauge which our Congressional Committee in this land of freedom has established. But it is not these Englishmen alone who will be rebuked by this action, but the great body of railroad owners and builders in this country, who, having had the great excellencies of the narrow gauge forced upon their attention for five years, have meanwhile blindly insisted on building twenty-five thousand miles of standard-gauge roads.

ANOTHER HEAVY SNOW STORM with high winds has been making serious trouble for the railroads north and west of Chicago. This storm, which began February 10, appears to have been especially severe throughout Northern Iowa, Minnesota, Wisconsin and Michigan and extended over the northern part of Indiana. The Chicago, Milwaukee & St. Paul had its La Crosse, Iowa & Minnesota and Iowa & Dakota divisions entirely blocked. The Burlington, Cedar Rapids & Minnesota was closed for nearly a week, and the Iowa Division of the Illinois Central was closed for two or three days. The Southern Minnesota, the St. Paul & Sioux City and the St. Paul & Pacific were also practically closed. In Michigan, the Detroit & Milwaukee and Jackson, Lansing & Saginaw had serious trouble, while on the Michigan Central it required hard work to keep trains moving. In fact, throughout the whole region named the railroads suffered severely and many cases of great hardship are reported. It is to be feared that the combined

effects of the unusually severe winter and the enforced economy of the past year will leave many of the Northwestern railroads in exceedingly poor condition for the spring traffic.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads, as follows:

Cairo & St. Louis.—On this narrow-gauge road 11 miles more track has been laid than we have hitherto reported, leaving but four miles yet to be laid.

Utah Southern.—Extended from Payson, Utah, south by west, 7 miles to Santaquin.

This is a total of 18 miles of new railroad.

The Civil Engineers' Report on Rapid Transit in New York.

At a meeting of the American Society of Civil Engineers held September 3, 1874, a resolution was adopted to appoint a committee of five members to investigate the necessary conditions of success, and to recommend plans for, first, the best means of rapid transit for passengers, and, second, the best and cheapest methods of delivering, storing and distributing goods and freight in and about New York city. This committee has just made its report, which consists of a document which would fill most of the pages of our paper. Its great length makes it impracticable to print this report entire, and therefore we must content ourselves with giving this abstract alone.

The Committee report that the first and most important requirement for rapid transit is that the fares shall be as low, or nearly as low, as upon the street railroads in our city. The cost of transportation depends, first, upon the cost of actual operation and, second, on the interest upon the capital invested, and it will wholly depend upon the volume of business and the amount of capital invested whether a rapid transit road will pay. They recommend that no authority be granted to any company to build a rapid transit railroad without the express stipulation that not more than half fare shall be collected unless the passenger is provided with a seat on demand. The committee say that at a rate of fare of about 1½ cents per passenger per mile, and a volume of traffic equal to that now passing over the Third Avenue Railroad would warrant an expenditure for the construction and equipment of a rapid transit road of about \$935,000 per mile of double track, and at the above rate of fare a traffic equal to that now passing over the Eighth Avenue line would pay on an expenditure of about \$650,000 per mile, while it is probable that the increased business upon the Harlem Railroad, if steam transportation were properly extended from Forty-second street to the Battery, would pay upon an investment of about \$1,500,000 per mile for that purpose.

The conditions of success for rapid transit roads are: 1. Each road must be prepared to do and should secure a larger volume of passenger business than is now done upon any railroad in the world, save the London underground roads. The volume of business assumed in calculating that the Harlem Railroad could afford to spend \$1,500,000 a mile to extend its road to the Battery was 35,000,000 of passengers per annum, or something like 100,000 per day. Probably about one-half of this number must be moved down town during three hours in the morning, and back in about the same time in the afternoon—say 50,000 in six hours. To be successful, therefore, this road must be prepared to transport about 8,400 passengers per hour in one direction, at certain times of the day. The rapid-transit roads must be double-tracked over the whole of their routes, and be prepared to provide four tracks below the point where their business gathers in sufficient volume to warrant it, and it is not practicable to accommodate freight trains over the passenger lines, although an express and mail business may be done.

In view of the tendency of such works to overrun their estimates, it would not be prudent to make plans of an estimated cost of much more than three-quarters of these sums. This leaves an amount of \$1,125,000 per mile, which the Harlem road could afford to invest, and of about \$700,000 a mile which could profitably be applied to an independent line, securing a traffic of about 35,000,000 passengers annually. The rolling stock to do this business will cost about \$225,000 a mile, so that sums of \$900,000, and \$475,000 per mile, respectively, would be left to pay for the road proper. Therefore no company could afford to purchase the right of way except at a few points required to pass from the line of one street to that of another. It seems clear, then, that in order to economize money in construction the right of way must be given through the existing streets. If an elevated road be selected, its cost will largely depend upon the rolling loads which are provided for, so that the weight of the engines and cars really become in that case the governing element. The success or failure of a rapid-transit road will largely depend upon the skillful design and the lightness of the rolling stock.

In planning rapid-transit roads, they should be considered as part of a general system adequate to the wants of the city. It more than one road is constructed, they are likely in time to amalgamate and be operated in loops, so that trains may be run around in a circuit in both directions. It would, therefore, be wise to begin with an approximate plan of the general system, and place the control of the group of lines on each side of the city in the hands of a separate company. Such a course would protect investors from the risk of future competition, and restrict within fixed limits the damage to property owners. The roads should be made to supplement, so far as they can, the existing street railroads, instead of being in opposition to them. It must be recognized that there are now many miles of rapid-transit roads built within the limits of the city. These are the Hudson River Railroad, from Sixty-fifth street

to Spuyten Duyvil; the New York Elevated Railroad; the Fourth Avenue Improvement of the Harlem Railroad; the Spuyten Duyvil & Port Morris, and the Harlem & Port Chester, as well as the railroad lines immediately beyond the limits of the city, which may be utilized for this purpose. A general rapid-transit scheme should utilize these existing lines so far as practicable.

The interests of the public, and of property-owners along the line should be protected during the location, construction and operation of the rapid-transit roads, but the public must give the right of way on two or perhaps eventually four avenues. Private interest should give way to public necessities and receive its reward in the share of the resulting general good.

The committee have examined 17 plans for underground roads, 8 for depressed and 50 for elevated roads.

UNDERGROUND ROADS.

The objection to this system is the immense cost, which, under the circumstances, is prohibitory. The cost of the Central Underground Railway was estimated in 1869 by competent engineers at \$17,625,301 for nine miles of road. The cost of the Arade Railway was estimated at \$2,096,950 per mile, without rolling stock, and the Fourth Avenue improvement is understood to cost about \$1,000,000 per mile, also without rolling stock. Besides the objection to this system by reason of its cost, it would during its construction seriously interfere with the present surface traffic on the streets; it would require expensive and inconvenient alterations of the sewerage, water and gas pipes; it would at many points be below high water mark, so that the cost of artificial drainage would add materially to the cost of maintenance; the ventilation would be difficult and expensive; the patronage might be reduced by the unwillingness of many persons to travel in tunnels. These objections seem to the committee so serious that any underground road will have to be undertaken at public expense as a city work.

THE DEPRESSED SYSTEM.

The great objection to this is the great cost of right of way.

THE ELEVATED SYSTEM.

This, if properly designed, is the cheapest form of construction. The objections to it are its great expense if built of masonry; its want of stability if built of iron; the danger to passengers from derailment; the injury and damage to real estate along the line; the invasion of privacy and annoyance to the occupants of buildings along the line; the frightening of horses in the streets; the interference of the supports with the street traffic if located in the roadway; the general unsightliness of the structure.

These objections are more than balanced by those which exist against the underground and the depressed systems, and the saving of first cost is so essential a matter that some form of elevated railroad should be made the leading feature of rapid-transit roads in most parts of the city.

The committee freely confess that it does not know what the effect of a successful rapid-transit elevated railroad will be upon the values of real estate along its line. The fears entertained regarding the invasion of privacy of the buildings along the line may be found by experience to be exaggerated. One member of the committee, with his family, has purposely occupied rooms on Ninth Avenue and on the same side of the street, and with windows fronting on the New York Elevated Railroad, and has not experienced any annoyance from the noise, smoke, steam, or other cause.

An examination of the different plans presented has convinced the committee that the only class of elevated road likely to prove profitable is an iron structure, 16 to 25 feet high, built over streets, the right of way being free, and operated by light locomotives. It is impracticable to propose a single plan to be applied and carried out in all parts of the city. No one plan can apply equally well to all parts, from the Battery to the Harlem River. At certain points the roads may be in tunnels, either to secure practicable gradients or to avoid annoyance to the public; at others they may go through the blocks, in open cuttings or in a masonry viaduct, while in the unsettled districts in the upper part of the island and beyond Harlem River, they may even be surface roads, and remain so until advancing population requires them to be raised out of the way of ordinary street traffic. For the greater part of the way, some form of elevated road, located over the streets, should be built, but this should vary in character with the circumstances of the neighborhood.

COST.

The leading elements of cost of an elevated road are the rolling weights to be carried and the position occupied in the streets. The light rolling stock proposed will exert a weight of 600 pounds, while an ordinary passenger train would impose a load equal to 2,686 pounds per lineal foot. In view, however, of the tendency to increase the weight of rolling stock on all roads, it is recommended that a rolling load of 1,200 pounds per lineal foot be assumed in designing elevated railroads, with a factor of safety of from 5 to 6. It is recommended that in the narrow streets the posts for supporting the roadway be located at the curb stones and the track be constructed over the carriage way and supported on iron girders extending from one side of the street to the other. If this method of construction be adopted in the wider streets or avenues, the cost becomes very great, owing to the length of the spans of the transverse girders which support those which run longitudinally and which carry the track. The estimated cost of such a structure varies from \$841,000 to \$486,000 per mile of double track. It is therefore proposed either to build the track on clusters of columns located at the curb stone, similar to the form of construction adopted for the upper end of the New York Elevated Railroad, or to place the supporting columns in the roadway of the street between the curbs. The cost of a road built on clusters of columns at the curb stone is estimated to be about \$250,000

per mile of double track, and if built on posts in the roadway about \$300,000.

ROLLING STOCK.

Light cars similar to those used on the New York Elevated Railroad are recommended. In order to facilitate ingress and egress to and from the cars, it is proposed to place the doors in the sides, and to prevent the indecent crowding of passengers against each other the seats should be divided by low divisions. Four-wheeled tank locomotives, weighing 9,000 lbs., also similar to those in use on the New York Elevated Railroad, are recommended. If, however, it should be necessary to increase the weight of the trains beyond the capacity of engines of this class, then eight-wheeled tank locomotives are proposed. The truck wheels are to be provided with a pair of auxiliary cylinders with separate throttle-valve and steam pipes, so that they can be used when necessary with the main cylinders and driving-wheels. By this means very great tractive power can be obtained, and the weight of the engine will at the same time be distributed over a great length of wheel base.

LOCATION OF ROUTES.

"After careful examination of the various routes which have been advocated before your committee, they are of opinion that the present wants of the population can best be served by two rapid transit roads, one on the east and another on the west of Central Park. The one on the east side may be either on the line of Third or of Fourth avenue. If upon the latter (and your committee is of opinion that this would prove both the most valuable and the most convenient route), it should be built as an extension of the Fourth Avenue Improvement of the Harlem Railroad, and under the control either of that company or of a corporation holding a contract with it to run its trains through the tunnel from Thirty-fourth to Forty-second street over the tracks intended for local business north of Forty-second street, so as to avoid all transfer of rapid-transit passengers at that point. The estimates of revenue and operating expenses upon this line, which will be found in the appendix, indicate that as much as \$1,500,000 per mile could profitably be invested on this extension, so that if an underground line is to be carried on anywhere, this would seem to be the route to locate it on. If built as an elevated road, there would be some difficulty in raising the track with sufficient rapidity, after emerging from the tunnel at Thirty-fourth street, so as to avoid blocking some of the cross streets. This might be obviated either by running for a short distance through the blocks toward Lexington avenue, to avail of the slope of the ground, or by raising the crown of the tunnel, but it can best be settled by surveys. In fact, surveys would be absolutely necessary to settle the location of the entire line, but your committee may indicate as a feasible route that following Fourth avenue to Eighth street, thence Lafayette place, Mulberry, Marion, Centre and Nassau streets to the Battery. Through Fourth avenue and Lafayette place the traffic is so considerable upon the streets that it seems proper that posts shall not be placed in the roadway, but that the support shall be taken at the line of the sidewalk, and the road constructed either over the posts, on each side of the streets, or over the middle of the street, and supported by girders resting on the posts along the inside line of the curbstones, even at the increased cost which this plan involves. Below the southern end of the latter the streets mentioned are all narrow and offer favorable circumstances for cheap construction over the middle of the street.

"All of this line should at least be built with two tracks, placed together side by side and over the center of street. The design of the structure will vary greatly with the width of the street between sidewalks.

"In order to accommodate the portion of the city below Union Square, east of the line above described, a double-track loop line would be advisable; diverging from the main line at some convenient point, and running into it again near the Battery. It would perform the double office of permitting a better accommodation of the population, and of relieving the accumulation of trains over the lower part of the line.

"If it should be preferred to build the rapid transit road upon the line of Third avenue, the same line could be followed from the Battery to Eighth street, and thence extended through the blocks to Third avenue.

"Through this avenue the character of structure would probably have to vary with the locality. Over certain portions it would be advisable to divide the road in two and to run one track on each side, placing its center over the edge of the sidewalk and supporting it upon small groups of columns, and at certain other points it might be practicable to place posts in the roadway. A requirement that the tracks should be over the center of the street and bearing be taken from the edge of the sidewalk would more than double the expense. It seems doubtful whether capital could be found to take up this line, should such a condition be insisted upon.

"On the west side a corresponding location would occupy the line of either Ninth or of parts of Seventh and Eighth avenues.

"If on Ninth avenue, its execution might be entrusted to the New York Elevated Railroad Company, which should, however, be required greatly to improve the present character of its structure.

"Over many portions of the Ninth avenue the committee believes that posts could be placed in the roadway without serious detriment to the surface traffic. The lower portion of the route might pass over Greenwich avenue and Washington square to the line of Greene and Church streets, the latter to be followed to the Battery, and a connection made there, as well as on Ninth avenue near Sixteenth street, with the present road of the company, which would become a loop line. The new portion above indicated should all be double-track, placed over the center of the streets, which are all narrow, and taking its support at the edge of the curbstones.

"If, however, this location be thought too far west, the line could diverge from Greenwich avenue at the intersection of Seventh avenue and follow this to Central Park. Over this portion of the route either posts would have to be placed in the roadway or a single track be carried over the edge of the sidewalk on each side of the street. Above Fifty-ninth street the road could either be carried through Central Park, or, crossing a portion of it, be located over the sidewalk on the east side of Eighth avenue, one post resting on the Park wall and the other on the edge of the curb. Before deciding upon such a location, however, careful inquiry should be made as to the probable effect upon the value of the choice residence lots on the other side of the Eighth avenue. Apprehensions lest the road in this location should mar the view of the Park are, perhaps, exaggerated. It would be at least 80 feet away from the nearest residence, and could not be more unsightly than the present tall row of telegraph poles, the removal of which would then become possible by transferring the wires to the elevated railway.

CONCLUSION.

"As a result, therefore, of the consideration of all the plans and schemes that have been submitted to your committee, and of the arguments that have been made for or against them, it has reached five conclusions:

"1st. In order to be profitable with the volume of business

likely to be obtained, double-tracked rapid-transit roads should not cost, fully equipped, much, if any more than \$700,000 to \$1,125,000 per mile, according to location, and this points to some form of elevated railroad as the leading feature of their design to be recommended.

"2d. The right of way will have to be given to them over streets selected for that purpose, and they should be operated by locomotives and by cars of somewhat different construction than those in use in this country, made very much lighter than ordinary rolling-stock.

"3d. The character of the structure carrying the road should vary with the location, so as to adapt itself to the local circumstances of each case. No one single plan is likely to prove applicable over all parts of the city.

"4th. There should presently be two roads, one on the east and another on the west side of Central Park, to be eventually complemented by one additional road on each side. The latter may be along the water front.

"5th. Another effort should be made to induce private capital to build them. If this fails, they should be taken up by the city and built as municipal works.

"The needed roads can be built in one year. It seems an object not unworthy the highest ambition of our leading citizens to confer rapid transit on the city of New York.

"The soundness or fallacy of these conclusions, and the consequences which result from them, must be established by the discussion which you shall give to this report.

"Your Society can hardly realize the labor which this investigation has imposed upon your committee. It has condensed, as well as it could, the most valuable considerations presented by others, and yet the report has swelled to inordinate length. It called for information, and it got more than it could properly manage within the time at its disposal. If it has succeeded in bringing the question within narrower limits, and in clearing a foundation for others to build on, although it does not recommend any definite plans, either of structure or location, it will feel that its labors have not been altogether in vain."

The publication of the portion of the report referring to the handling of freight in New York City must be deferred.

* This material (equivalent to about 10 octavo volumes) is handed in with this report to the Society.

General Railroad News.

TRAFFIC AND EARNINGS.

—The shipments of Blossburg coal over the Corning, Cowanesque & Antrim road for January were 19,039 tons.

—The Pennsylvania & New York road carried during the two months ending January 30, 89,984 tons anthracite and 51,047 tons bituminous coal, a total of 141,031 tons.

—The earnings of the Pennsylvania Canal for the year 1874 were:

Earnings from canal.....	\$494,399 28
" " boats.....	51,929 41
Total earnings.....	\$546,328 69
Expenses.....	236,186 04
Net earnings.....	\$310,142 65
Interest on funded debt.....	187,920 00
Surplus.....	122,222 65

The total tonnage carried was 871,358 tons; tons moved one mile, 77,766,958. The length of canal owned is 327 miles.

—The earnings of the Oil Creek & Allegheny River Railroad for the year ending December 31 were:

	1874.	1873.	Decrease.	P. c.
Earnings.....	\$846,851 72	\$1,067,733 20	\$220,881 48	20.68
Expenses.....	562,119 68	724,996 41	162,876 73	22.46
Net earnings.....	\$284,732 04	\$342,736 79	\$58,004 75	16.92

Per cent. of expenses, 1874, 66.38; 1873, 67.90. Earnings per mile, 1874, \$6.885; 1873, \$8.681.

—The earnings of the West Jersey Railroad for the year ending December 31 were: 1874, \$623,391.46; 1873, \$680,856.23; decrease, \$57,464.77, or 8.44 per cent.

—San Francisco wheat shipments in January were 28 cargoes, 49,098 tons, and the flour shipments amounted to 74,100 barrels. In 1874 the shipments were 48,975 tons of wheat and 34,000 barrels of flour. The shipments for the seven months of the crop year, reducing flour to wheat, were: 1874-75, 7,312,500 cents; 1873-74, 6,749,000; 1872-73, 7,262,300; increase, this year over last, 563,500 cents, or 8½ per cent.; increase, this year over 1872-73, 50,300 cents, or 0½ per cent.

—The earnings of the Denver & Rio Grande road (main line, 118 miles) for December were:

	1874.	1873.	Inc.	P. c.
Earnings.....	\$29,992.96	\$23,071.09	\$6,921.87	30
Expenses.....	16,408.86	14,057.71	2,351.15	16.8
Net earnings.....	\$13,584.10	\$9,013.38	\$4,570.72	50.2

Earnings per mile, 1874, \$254; 1873, \$196. Per cent. of expenses, 1874, 53.38; 1873, 69.32.

—The earnings of the Atchison, Topeka & Santa Fe Railroad for December were:

	1874.	1873.	Inc.	P. c.
Earnings.....	\$102,225	\$79,303	\$22,922	28.9
Expenses.....	49,757	46,854	2,903	6.2
Net earnings.....	\$52,468	\$32,449	\$20,019	61.7

Per cent. of expenses, 1874, 48.7; 1873, 59.1. Earnings per mile, 1874, \$201; 1873, \$156.

—Additional reports of earnings for the year 1874 have been made by the following companies:

	1874.	1873.	Inc.	Dec.	P.
Denver & Rio Grande.....	\$376,959	\$392,804		\$15,845	4
Pacific, of Missouri.....	3,614,028	3,606,648	\$7,380	0
Toledo, Wabash & Western.....	4,997,720	5,738,807	741,087	12
West Jersey.....	623,391	680,856	57,465	8

—A statement published in the Toledo Blade gives the earnings of the Toledo, Wabash & Western Railway for the year ending December 31, 1874, as \$4,997,720 and for 1873 as \$5,738,807. The company's annual report, however, stated the earnings for 1873 as \$5,738,807.

—The following companies have thus far reported earnings for January:

for January.				
	1875.	1874.	Increase.	Decrease.
Burlington, Cedar Rap. & Minn.....	\$105,436	\$108,303	\$2,867	2.6
Central Pacific.....	890,000	848,558	41,442	4.9
Denver & Rio Grande.....	20,801	20,636	165	0.8
Indianapolis, Bloom. & West.....	116,342	151,795	35,253	28.6
Indianapolis, Cin. & Lafayette.....	138,008	145,281	7,273	5.3
Inter. & Gt. Northern.....	122,575	131,110	8,535	6.9
Kansas Pacific.....	163,737	170,340	6,603	4.0
Missouri, Kan. & Texas.....	216,000	266,358	50,358	23.3
Ohio & Mississippi.....	249,250	208,298	40,952	19.6
St. Louis, Alt. & T. H.....	77,876	99,724	21,848	28.1
St. Louis, Mo. & N. W.....	57,131	38,606	18,525	48.2
St. Louis, Iron Mt. & Co.....	26,393	250,074	16,321	6.5
Toledo, Peoria & Warsaw.....	71,437	96,794	25,357	35.2

THE SCRAP HEAP.

Railroad Manufactures.

The Vulcan Iron Works at St. Louis have an order for several hundred tons of light rails for the West End narrow-gauge road.

The Portland Company, at Portland, Me., are building seven engines for the Grand Trunk, and have eight more in the shop which they are changing from broad to standard gauge for the same road. They have also a good deal of steamboat work on hand.

The Baldwin Locomotive Works are building 16 engines to go to Brazil, and have several orders from the West Coast of South America.

The National Tube Works Company, of Boston, has declared a semi-annual dividend of six cents.

The Litchfield (Ill.) Car Works will resume full operations by March 1.

The Chattanooga (Tenn.) Commercial of January 31 says: "The movement of iron through here is quite active—about 10 loads per day are going to Louisville and Cincinnati from furnaces below here. The furnace here recently sold 500 tons of No. 3 to a party in Nashville, at about \$23.50 per ton, delivered on the cars here. Considerable quantities are being brought down the river on flatboats and stored here for higher figures. Most of this iron is charcoal cold blast, and of the finest quality of car-wheel iron."

The Susquehanna Iron Company's rolling mill at Columbia, Pa., is running full double turn with large orders on hand.

The Danforth Locomotive Works at Paterson, N. J., are building three engines for the Baltimore & Ohio, two for a Western road, and two narrow-gauge engines and 34 cars for a South American sugar plantation.

The Grant Locomotive Works.

The creditors have made application to the Chancellor of New Jersey for the appointment of a receiver. The order would undoubtedly be granted, as there is no opposition, and it was expected that Mr. Charles Pierson, of the Ramapo Wheel Foundry Company, would be appointed.

Life of Rails on the Central Railroad of Georgia.

The report of this company for the nine months ending with August last has a page giving a statement of the road's experience with rails of different manufactures laid since 1869. Our column gives the average monthly depreciation, which varies from 0.0018 in the case of some rails rolled in Atlanta and laid in March, 1873, to 0.0098 in that of a large lot of English rails without a brand which were laid in January, 1870. A small lot of Atlanta rails laid six months earlier than the lot last mentioned have worn on an average 0.0087 per month, and 94.6 per cent. of them are in track while only 66½ per cent. of the English rails remain.

The monthly depreciation for all the lots reported is shown below.

Brand.	Where made.	Months in service.	Monthly depreciation.
S. R. M. Co.	Atlanta, Ga.	62	.0087
None.	England.	55	.0608
Raymney.	"	60	.0190
T. I. Co.	"	49	.0117
Extra Victoria.	"	39	.0150
Rhymney.	"	36	.0120
A. I. Co.	"	36	.0098
T. I. Co.	"	36	.0120
Ex. & A. I. Co.	"	36	.0072
Rymney, 71 Ex.	"	36	.0058
S. R. M. Co.	Atlanta, Ga.	28	.0021
Steel-capped.	England.	25	.0181
A. I. Co.	"	19	.0042
None.	"	18	.0038
S. R. M. Co.	Atlanta, Ga.	18	.0018
None.	England.	42	.0119
Lackawanna.	Scranton, Pa.	40	.0128
None.	England.	42	.0108

OLD AND NEW ROADS.

Junction & Breakwater.

Several branches and extensions are, it is said, to be built by the Old Dominion Steamship Company, which now controls this road, the object of all of them being to secure a share at least of the carrying trade of the lower peninsula. The first is an extension of the Breakwater & Frankford road from the Delaware line south to Berlin, Md., to connect with the Worcester Railroad and the proposed extension of the latter to Cherrystone, Va. Next is a branch from Georgetown southwest to Delmar, which will give a connection with the Eastern Shore road independent of the Delaware Railroad. A short spur from this branch to Seaford would also give connection with the Dorchester & Delaware. Lastly there is a branch from Milford northward and parallel with the Delaware road to Dover and possibly to Smyrna, which would connect with the Maryland & Delaware, Kent County and Queen Anne's & Kent. These lines would give every part of the peninsula access to Lewes and the steamer line from that port to New York, and thus give the Old Dominion line a share of the trade. It is claimed that the fruit business, which forms so large a share of the peninsula traffic, can be carried much better by water than by the all-rail route.

The company proposes building repair shops for its railroad lines at Georgetown and a ship-yard at Lewes where its steamers can be repaired and new ones built as required.

Meetings.

The following companies will hold their annual meetings at the times and places given:

Cleveland, Columbus, Cincinnati & Indianapolis in Cleveland, O., March 3.

Union Pacific at the office in Sears' Building, Boston, March 10, at 10 a. m.

Northern Central in Raine's Hall, Baltimore, February 25, at 2 p. m.

Delaware, Lackawanna & Western, at the company's office, No. 26 Exchange Place, New York, February 23, at 12 noon.

St. Louis, Kansas City & Northern at the company's office in St. Louis, March 2, at 10 a. m.

Pennsylvania, at Musical Fund Hall, Locust street, Philadelphia, March 9, at 10 a. m. The annual election of directors will be held at the general office in Philadelphia, March 23.

Leavenworth, Lawrence & Galveston.

Application has been made to the United States Circuit Court for the appointment of a receiver and a bill for the foreclosure of the first mortgage has been filed.

Atlantic & Great Western.

The United States Rolling Stock Company continues at work collecting its cars from this road and carrying them to Mansfield, O., to be stored there. Its operations have somewhat embarrassed the railroad people, and they have been obliged to borrow some Lake Shore cars for use on the Mahoning Division, which is of standard gauge.

Western Railroad Bureau.

The Commissioners have issued a circular requesting managers to send them circulars, orders and instructions relating to passenger business and commissions on tickets.

It is understood that during the suspension of their duties as to freight business, the Commissioners are to confer as

much as possible with managers of railroads and to see if arrangements cannot be made to reorganize the bureau on a basis which will be generally accepted.

The New York Central and Lake Shore are now paying commissions on New England passenger business to meet those paid by the Grand Trunk.

Fayetteville & Goldsboro.

A bill to charter this company is before the North Carolina Legislature and provides for a railroad about 60 miles long, from Fayetteville east by north to Goldsboro.

Burlington, Cedar Rapids & Minnesota.

There has been a partial reorganization of the company. President Greene and several of the old directors having resigned. Their places have been filled by Messrs. John I. Blair, Winer and others, who are well known from their connection with the Sioux City & Pacific, the Cedar Rapids & Missouri River and other Iowa roads.

Geneva, Ithaca & Athens.

It is stated that the controlling interest in this road, formerly held by Ezra Cornell, has passed into the hands of the owners of the Cayuga Railroad. That road and the northern half of the Geneva, Ithaca and Athens are parallel and to some extent competing lines, both running from Ithaca north to the New York Central. It remains to be seen what will be the policy of the new owners of the road.

Chicago, Burlington & Quincy.

The Galesburg (Ill.) Republican says this company is so troubled by want of water at many points that it is carrying water tanks, made of boiler iron and bolted to flat cars, which are run from place to place along the line according to the quantity of water to be had at the regular tanks.

St. Louis, Keosauqua & St. Paul.

This company has purchased the rails and the equipment in use for some time past by the contractors on the Des Moines Rapids improvements, and will complete its line as a narrow-gauge road from Keosauqua to the Keokuk & Des Moines at Summit, a distance of about four miles.

Wisconsin Railroad Law.

A Milwaukee dispatch gives a summary of the recommendations made by the Railroad Commissioners in their annual report. They state that the only form of railroad control likely to prove successful, under present conditions, is legislative, supplemented by direct supervision, the Legislature laying down a general rule of action, but leaving the application and enforcement of it to Commissioners. The proposed new law will require:

First—The determination by the Commissioners of the actual cost value of each road, such value not to be greater than the actual cost, and to be subject to legislative revision.

Second—The annual determination of the gross and net earnings of each company, the reports of the company, the inspection of the books and affairs and other practicable methods.

Third—The division of roads into two classes, the first class including all roads paying a reasonable compensation on the valuation, and the second class including all other roads.

Fourth—Maximum rates of fare and freight for roads belonging to the first class, such maximum being subject to legislative revision.

Fifth—No restrictions of earnings on the second class roads, except to remedy unjust discriminations.

Sixth—Prohibitions of unjust discriminations and unreasonable rates.

Seventh—Close connections.

Eighth—A limited power of the Commissioners to require the repair of roads or rolling stock, and increased accommodations for passenger travel.

Ninth—Full and complete publicity of rates.

Tenth—Publicity to all contracts and agreements between the companies and to their business transactions generally.

Eleventh—Completeness of accounts and greater fullness and frequency of reports.

Twelfth—Adequate penalties for falsification or concealment of earnings and expenditures.

It is understood that the proposed new law will allow the companies a profit of 10 per cent. on a cash valuation of their property. When the earnings are more the rates must be reduced.

It is thought probable that the Legislature will substitute a law embodying substantially these points for the present one. In case of its passage the Governor will undoubtedly sign it, as it is understood to agree with his own views.

Dividends.

Dividends have been declared by the following companies: Ohio & Mississippi, 3 1/2 per cent., semi-annual, on the preferred stock, payable March 1.

Chicago & Alton, 5 per cent., semi-annual, payable March 3. Transfer books are closed from February 20 to March 4.

Rutland, 3 1/2 per cent., semi-annual, on the preferred stock, payable in scrip.

Washington City, Virginia Midland & Great Southern.

In pursuance of the general policy of cutting down expenses, a reduction of 20 per cent. in the pay of every official and employee has been ordered, and all employees not absolutely necessary are being discharged.

Freight Rates Eastward.

At the General Freight Agents' meeting in Chicago, February 11, a new tariff on freight from Chicago eastward was adopted. It was also agreed to discontinue the practice of making special contracts below the regular rates. The rates per 100 lbs. are as follows:

FROM CHICAGO TO	First class.	Second class.	Third class.	Fourth class.	Grain.	Flour.	Bulk meats.
Philadelphia.....	\$1 35	\$1 10	75c.	35c.	35c.	70c.	40c.
Baltimore.....	1 35	1 10	75c.	35c.	35c.	70c.	40c.
New York.....	1 50	1 10	85c.	40c.	40c.	80c.	45c.
Boston.....	1 60	1 20	90c.	45c.	45c.	90c.	50c.
Pittsburgh.....	80	60	40c.	25c.	25c.	50c.	30c.

The representatives of the roads running westward from Chicago held a meeting on the same afternoon, for the purpose of establishing rates for points west of the Mississippi River. It had heretofore been the custom to pro-rate from New York to Kansas City and other points on the Missouri River, thereby making the through rates but little above those from Chicago to the points mentioned. The rate adopted provides that all freight destined for places on the Missouri River shall be subject to the following arbitrary rates: From St. Louis, Louisiana, Hannibal, Quincy, Burlington, and Davenport to Kansas City, Atchison, Leavenworth, St. Joseph, East Nebraska City, Plattsmouth, and Council Bluffs, first class, 72 cents; second class, 49 cents; third class, 38 cents; fourth class, 36 cents; special class, 24 cents; class A, \$50; class B, \$45.

The rates for local tariff from Chicago to points on the Missouri River were fixed at 20 cents on first class, 15 cents on second and third class, and 10 cents on fourth class higher than the rates that may be charged from St. Louis. It was

decided not to charge more than \$10 per car above the rates charged from St. Louis on all iron manufactures, including railroad iron, car wheels, pig-iron, spikes and splices, and hard coal.

Keating & Karthaus.

Subscriptions are being taken to the stock of this projected road, and as soon as the required amount is secured a company will be organized. The road is to be about 18 miles long from Karthaus, Pa., northeast down the West Branch of the Susquehanna to the mouth of Sinnemahoning, where it will connect with the Philadelphia & Erie. It will open up some mineral property.

Maine Central.

The further negotiation of the new consolidated mortgage bonds has been entrusted to the banking house of J. B. Brown & Sons, Portland, Me.

Vermont Central.

Holders of second-mortgage bonds are requested to communicate with a committee, consisting of James W. Emory, Thos. H. Perkins and Estes Howe, whose address is at No. 39 State street, Boston.

Chicago & Iowa.

In conformity to the provisions of a traffic contract between the Chicago, Burlington & Quincy and this company, sealed proposals indorsed "Proposals to sell Chicago & Iowa Bonds," addressed John N. Denison, Boston, will be received until February 26 for the sale of 78 bonds of the company.

Charlotte, Columbia & Augusta.

The stockholders have decided to reject the offer to lease their road which was made by the South Carolina Railroad Company. It is possible that a more acceptable offer may be made by the latter.

Cairo & Vincennes.

The contract to build the inclined plane at Cairo has been let to W. & D. H. Stoddard, who have already begun work and are to complete it in three months. The company will be able to transfer its cars across the Ohio and Mississippi rivers.

Columbus, Chicago & Indiana Central.

In the suit to enforce the payment of interest on certain second mortgage bonds, brought before the United States Circuit Court for the Southern District of Ohio, the Pennsylvania Company, as defendant, demurs to the indictment on the principal ground that the facts contained in the bill are not sufficient to constitute a defence, and that it is not alleged that the Pittsburgh, Cincinnati & St. Louis Railway Company had proper notice of default. Another ground of demurrer is that the Pittsburgh, Cincinnati & St. Louis Railway Company is a necessary party to the transaction complained of, and is not within the jurisdiction of the court.

Vermont Railroad Securities.

The St. Albans Messenger gives the following table of the present selling price of the securities of the various railroads comprised in the Vermont Central trust, as compared with their par value:

	Par value.	Present value.
First mortgage bonds.....	\$5,000,000	Nothing.
Second mortgage bonds.....	3,000,000	\$400,000
Equipment bonds, 8s.....	1,500,000	60,000
Vermont & Canada stock.....	3,000,000	1,800,000
Missouri, 7s.....	500,000	300,000
Stantford, Sheffield & Chamblay, 7s.....	500,000	300,000
Rutland stock (old).....	2,333,000	Nothing.
Third mortgage bonds.....	440,000	Nothing.
New Rutland stock.....	2,700,000	135,000
Preferred stock.....	4,250,000	80,000
Bonds.....	2,500,000	1,300,000
	\$28,673,000	\$6,735,000
Loss.....	\$21,938,000	

The exhibit is not encouraging, though it is probable that the present low price, which is certainly below the real value of the property, is caused more by distrust than anything else.

Baltimore & Ohio.

The trouble which has been impending for some time between this company and the Pennsylvania has broken out again rather suddenly but not at all unexpectedly, and the Pennsylvania Railroad Company has returned to the old policy of refusing to haul the passenger and freight cars of the Baltimore & Ohio over its line from Philadelphia to New York. An order has been issued to that effect and also to stop the sale of tickets over the Baltimore & Ohio in all the Pennsylvania offices. On hearing of this order President Garrett sent a long protest to President Scott, to which Mr. Scott replied in a long letter, charges of bad faith being made on both sides.

The Baltimore & Ohio Company continues to sell through tickets from its offices in New York, but is obliged to purchase local tickets from New York to Baltimore. As a measure of retaliation on the Pennsylvania, a reduction in passenger fares has been ordered, as follows: From Baltimore and Washington to Chicago, from \$19 to \$10; to Cincinnati, from \$16 to \$10; to St. Louis, from \$23 to \$15; to Louisville, from \$20 to \$12; to Pittsburgh, from \$8.50 to \$6. A similar reduction has been ordered in rates from Philadelphia. Arrangements have also been made for a line of fast freight steamers from Baltimore to New York to run in connection with the Baltimore & Ohio.

The Philadelphia, Wilmington & Baltimore announces its intention to adhere to its old policy of absolute neutrality between the contending parties, and the Baltimore & Ohio trains will run through to Philadelphia over that road.

Erie.

It is stated that negotiations are in progress for the sale of the Grand Opera House property in New York to parties whose names are not made public.

In the suit brought to recover \$132,000 alleged to be due the company from Mr. O. H. P. Archer, who for some years held a contract for handling all the freight received and delivered in New York, a motion has been made for a receiver to take possession of the books and accounts now in possession of Mr. Archer, but which are claimed by the company.

Some embarrassment in the operation of the road was caused by a curious incident at Hornellsville, where the turn-table pit was filled with water during the thaw of February 3. The water did not run off and during the cold weather which immediately succeeded the thaw the water was frozen solid, and the table could not be turned. Eighteen locomotives were thus imprisoned in the round-house, which the operatives were unable to extricate until Saturday.

At the last monthly meeting of the directors President Jewett stated that the months of October, November and December last were very trying months for the company, the traffic being dull and the rates at which it was moved were low, and the east-bound traffic irregular; that the month of January was also a very dull month and a very trying one on the road, but business had begun to improve during the month, and up to the present year in February there were decided indications of improvement, and that he had every reason to hope for more favorable results at the end of the present quarter of the company's financial year; that to ascertain the result of the

first quarter ending December 31, he had taken the annual interest payable by the company, and where payable in gold had reduced it to currency, had taken the rentals, and where that was payable in coin by the same process reduced it to currency, the entire taxes of the year, and these three items added together, the aggregate was apportioned equally between the four quarters of the fiscal year. To the proportion chargeable to the quarter ending December 31 was added all the expenses of the company, thus showing the amount with which that quarter was properly chargeable. That the earnings of the company for the same quarter were more than equal to the amount thus incurred and chargeable, which, in his opinion, under the circumstances of the case, was a result which might be regarded favorable.

Philadelphia & Reading.

Orders have been given to resume work in the machine shops with one-half the usual force. There will also be a partial resumption in the foundries.

Oil Creek & Allegheny River.

This road is to be sold in Philadelphia May 15, under foreclosure of the consolidated mortgage. The sale will include the whole property, and is made subject to first mortgages of \$2,580,000. The terms of the sale require \$50,000 to be paid by the purchaser in cash on the day of sale, and the balance in 20 days, such balance being payable in bonds of the consolidated mortgage.

The road is 95 miles long, from Irvineton, Pa., to Corry, with a branch 25 miles long from Titusville to Union.

The Storm.

The snow storm and intense cold which gave the Western roads so much trouble passed eastward and came upon Northern New York and New England about the end of last week. In New York the worst effects of the storm were felt by the New York Central and the roads north of it, though the Erie had its Western Division closed for two or three days. The Central at one time had 40 freight trains stalled along the line, a number of the engines being frozen up. Great difficulty was experienced in getting the passenger trains through, and the animals in the blocked stock trains, of which there were several, suffered severely. The Rome, Watertown & Ogdensburg and Utica & Black River were entirely closed for two days and were only cleared by a great deal of hard work. Nearly all the roads of Northern New England suffered badly, and on most of the Canadian roads travel was altogether suspended.

Indiana & Illinois Central.

In the foreclosure suit the United States Circuit Court has ordered that all bondholders must present their claim for allowance to J. D. Howland, Master in Chancery, at the office of the Clerk of the Court in Indianapolis, April 14, 1875.

White River Valley & Texas.

This company has been merged in the Memphis & Kansas City and all subscriptions made to its stock have been transferred to the consolidated company.

Chicago & Iowa Western.

This organization talks of building a narrow-gauge road from Chicago via Dixon to Thompson, on the Mississippi River, and thence through Iowa and Nebraska via Decatur on the Mississippi to Columbus on the Union Pacific.

Taylor's Falls & Lake Superior.

This company, which has just been organized, purposes building a railroad from Taylor's Falls, Minn., west about 18 miles to a connection with the Lake Superior & Mississippi.

Southern Pacific.

The board has ordered the immediate beginning of work on the San Fernando tunnel.

The contractors on the extension of the Los Angeles Division from Spadra to the San Geronimo Pass have begun work and have about 250 men employed. The number is to be increased soon.

Los Angeles & Independence.

None of the bids for the construction of the first section have been accepted and the work will be done by the company directly. Chief Engineer Crawford has been instructed to secure the necessary men, teams and tools. A large amount has been subscribed to the stock.

Utah Southern.

Trains are now running regularly between Salt Lake City and Payson, Utah. The track is laid to Sentaquin, seven miles south by west from Payson and 71 miles south from Salt Lake. The train will run to that point shortly.

West End Narrow Gauge.

The St. Louis & Florissant Railroad Company has been reorganized under this name and arrangements have been made to iron the first five miles of the road at once.

Fort Wayne, Muncie & Cincinnati.

The United States Circuit Court has discharged Mr. Edgerton, the Receiver appointed by it and subsequently arrested for contempt of the Indiana Circuit Court, which had appointed a receiver in another suit. Mr. Edgerton was brought before the United States Court on a writ of habeas corpus. The latter court also asserts its prior jurisdiction of the case and refuses to rescind the order appointing Mr. Edgerton. That gentleman will therefore be put again in possession of the road and dispossess the Indiana receivers.

The suit in the United States Court is brought on a judgment obtained by Gaylord and others of Cincinnati. The Indiana suit is brought on behalf of a portion of the bondholders, who allege fraud in the management.

New Jersey Southern.

A decision has been given by the New York Supreme Court in the suit brought by D. B. Allen to set aside the foreclosure sale of the old Raritan & Delaware Bay road and the reorganization as the New Jersey Southern, on account of fraud and of collusion between the directors of the old company and the parties who procured the foreclosure. Three demurrers were made to the complaint: first, that it did not show any sufficient cause of action against Jay Gould and the other directors, which was sustained; second, that the Raritan & Delaware Bay Company was a necessary party to the action, also sustained. The third demurrer, which had reference to the jurisdiction of the court, was not sustained, but the complaint was dismissed on the first two.

Toledo, Wabash & Western.

A meeting of holders of bonds of the Great Western of 1859 and Illinois & Southern Iowa companies was held in New York, February 13, over \$800,000 of bonds being represented. After some discussion a resolution was adopted and signed by those present, appointing a committee consisting of Messrs. Griswold, Brown, Baldwin and D. D. Lord to represent their interests. This committee is instructed to take judicial proceedings to have receivers appointed for the sections of road covered sections are applied according to priority of liens and not used to pay off floating debt in preference to mortgage liens. The committee is also instructed to confer with the directors and with other first mortgage bondholders.

Burlington & Missouri River in Nebraska.

In the United States Court at Omaha, Neb., the United States District Attorney has begun suit against this company

to recover 1,200,000 acres of land alleged to have been illegally patented to the company outside of the statute limits. A considerable quantity of the land has been sold.

In the land tax cases against the company the United States Circuit Court has ordered the injunction dissolved in ten counties. In these the company has no property and the counties cannot recover the tax unless the Legislature authorizes them to levy on property outside of their limits. In the counties of Seward and York the injunctions are continued, and the company has deposited \$20,000 in Court to pay the taxes in case of an adverse decision.

Yardleyville Connecting Railroad.

A company by this name has filed its articles of association with the Secretary of State of New Jersey. The road is to be three miles long from the Delaware at the Yardleyville Bridge to a point on the Delaware River & Bound Brook road.

Ewing & Trenton.

A company by this name has been organized under the general law to build a railroad from the City Bridge in Trenton, N. J., to a point in Ewing township. It will be about five miles long and with the Yardleyville road, whose organization is noted elsewhere, will form a branch of the Delaware River & Bound Brook road to Trenton.

Securities on the New York Stock Exchange.

The equipment bonds of the Michigan Central Railroad have been put on the regular list. These bonds bear 8 per cent. interest, payable April 1 and October 1, and run until 1883. The amount outstanding is \$800,000.

Transandine Railroad.

The Valparaiso and West Coast Mail says, on publishing the act of the Chilean Congress, formally promulgated Nov. 13, which empowers Clark & Co. to construct a railroad over the Andes via the Uspallata pass, to connect with their line to Mendoza, San Juan and Buenos Ayres: "It will be seen from the document in question that the gauge of the line will be one metre, and it is stipulated that the surveys shall be definitely concluded in one year, and further that the line shall be opened for public traffic within five years after the conclusion of the surveys; the President, however, is empowered to grant an extension of time not exceeding two years for the conclusion of the line. Another stipulation is that government employees and government materials shall pay half rates. The rolling stock and the materials of every kind required for the line will be admitted duty free, and Messrs. Clark & Co. are empowered to export bullion to the value of one million dollars, free of export duty. Another important concession is the free use of public lands and roads, but perhaps the most important of all is the government guarantee of 7 per cent. per annum on \$3,000,000 for twenty years. The total cost of the Argentine section between the boundary limit with Chile and the port of Buenos Ayres will be about \$22,000,000, and the Argentine Government has already granted to Messrs. Clark & Co. a guarantee of 7 per cent. per annum on the cost of the line. The length of the Chilean section from the terminus of the Central Railway at Santa Rosa to the mouth of the tunnel in the Andes will not exceed fifty miles."

North Pacific Coast.

A California paper gives the following description of this road:

"From Saucelito to Tomales the distance is 52 miles, including a branch track into San Rafael. The route selected is as follows: Starting from deep water at Saucelito, where the company have constructed a large and commodious wharf, and have located their machine shops and round-houses, it skirts for two miles the shore of Richardson's Bay, thence crossing an arm of the same by means of a substantial bridge 4,000 feet in length, now nearly completed. It passes through Marin County via the town of San Rafael, its county seat, to the head of Tomales Bay; thence skirting the shore of that bay to the town of Tomales; thence passing from Marin to Sonoma County, and, via the towns of Valley Ford and Freestone, to the Russian River, along the south bank of which the road is located, to the point of crossing, about four miles from its mouth. From this point it follows near the coast of the ocean to the mouth of the Walballa River, a total distance of 115 miles; the point of crossing the Russian River is 77 miles from Saucelito and 85 miles from San Francisco, and is the terminus of the first division.

"The rails of the track are three feet apart, and the iron weighs 35 pounds to the yard. The highest grade coming from Tomales to San Francisco, which is in the direction of the largest traffic, is 80 feet to the mile; and in the opposite direction the highest grade is 120 feet to the mile. Construction was begun in 1872, and up to the present time \$1,500,000 has been expended. This includes the purchase of the San Quentin ferry steamers, the Clinton and the Contra Costa, and an expenditure of \$70,000 on the line beyond Tomales. One of the most formidable difficulties was the bridging of Richardson's Bay. This structure is 4,000 feet long. So far there are three tunnels. One of these at White's Hill, is 1,250 feet long; another, this side of White's Hill, is 200 feet long, and the third near Tomales is 130 feet long. A barge has been built that will convey 18 cars from Saucelito to San Francisco, the real terminus of the road. The present equipment for traffic is six passenger and two baggage cars, very neatly constructed by the Kimball Carriage Company; four locomotives built at Philadelphia by Baldwin and 75 freight cars, with 50 more in course of construction.

"The country through which this road passes is a fine one. Most of it is farming and dairying land, until the road reaches Russian River, where it gets into a timber country. * * * The culverts and bridges on the road are of a very substantial character, and the piling in Richardson's Bay and earthworks at Tomales Bay have been done in first-rate order. The curves on the road are laid out in from 8 to 17 degrees, although there is one curve of 20 degrees. In the course of next summer some changes will be made which will reduce a few of the curves and shorten the road slightly. The highest embankment on the road is 76 feet high, and the deepest cut about 40 feet. The depots at stations have not yet been built, but will be during the summer. After the road reaches Russian River it follows it to the coast and thence runs up the edge of the redwoods of North Sonoma County to Mendocino County. This is the ultimate destination of the road, unless they see their way by that time to stretch out for the northern counties. This summer they will only attempt to reach Russian River, and will be satisfied if they carry out their expectations of getting to Knowlesville by October.

"The actual cost of the road to Tomales, 51 miles, making with the San Rafael Branch 53 miles, and the present equipment, is less than \$1,400,000, the other \$100,000 having been more than expended on earth work beyond Tomales, and the purchase of the San Quentin ferry and steamers. This is just \$36,415 a mile, or say, when the depots are erected and ballast finished, \$27,000."

Auction Sale of Railroad Securities.

In New York, February 10, securities sold at auction brought the following prices: United New Jersey Railroad & Canal stock, 130%; Morris & Essex stock, 95%; Warren Railroad stock, 94; Avenue C (street) Railroad, 107 shares sold for \$26; Delaware & Hudson Canal 7 per cent. bonds, 105%; Evansville & Crawfordsville 7 per cent. bonds, 95 and 96; Indianapolis & St. Louis, first-mortgage 7 per cent. bonds, 79; Madison & Indianapolis 7 per cent. bonds, 77; American Dock & Improvement Company 7 per cent. bonds guaranteed by New

Jersey Central, 100; Second Avenue (New York) Railroad 7 per cent. bonds, 97½ and 97%.

Union Pacific.

This company has proposed as a compromise to put an end to the pending disputes between itself and the Government to pay annually into the Treasury as a sinking fund \$500,000 for 20 years, until 1895, and thereafter \$750,000 annually. These payments are to be held as a sinking fund and to be continued until the amount of such fund equals the original advances made by the Government with simple interest thereon, the Government to retain its lien on the road until the debt is entirely cancelled, and this annual payment to be in lieu of all obligations due by the company to the Government.

Boston & Albany.

At the annual meeting in Springfield, February 10, the stockholders voted to authorize an issue of \$5,000,000 new bonds, to take up maturing bonds and complete further improvements.

Chicago, Dubuque & Minnesota.

At a meeting of the bondholders of this company and the Chicago, Clinton & Dubuque, in Boston, February 3, Robert Faine, S. P. Burt, C. P. Bowditch, G. S. Hale and F. W. Bird were appointed a committee to investigate the condition of the road and report to an adjourned meeting, to be held February 17. A plan for the purchase of the roads by the bondholders was submitted, but not acted on, except to lay it over until the committee's report is received.

Columbus & Toledo.

The directors met in Columbus, O., February 4, and resolved to take steps at once to secure \$150,000 additional stock subscriptions, which will make up \$1,000,000. As soon as this amount is secured work will be begun at once.

Columbia Conduit Company.

The Pittsburgh Court of Common Pleas has issued a preliminary injunction to restrain the company from attempting to lay its pipes under the West Pennsylvania Railroad at Powers' Run, pending the hearing of an application to the Court for a permanent injunction.

Train Accidents in January.

On the 2d a passenger train on the Memphis & Little Rock Road ran off the track in Argenta, Ark., and was delayed two hours.

On the 2d four cars and an engine of a mixed train on the Galveston, Harrisburg & San Antonio road were thrown from track at East Richmond, Tex., by a broken rail.

On the evening of the 2d, as a passenger train on the Morris & Essex Division of the Delaware, Lackawanna & Western was running out of the depot at Hoboken, N. J., the engine was thrown from the track by a misplaced switch.

About one o'clock on the afternoon of the 4th, as the limited express from New York to Washington, was near Wilmington, Del., on the Philadelphia, Wilmington & Baltimore road, an axle broke under the tender, delaying the train two hours. The tender did not leave the track.

On the afternoon of the 4th a passenger train on the Memphis & Little Rock road was thrown from the track by broken rail near Galloway, Ark., and the whole train went down a bank, two of the cars upsetting. Three passengers were hurt.

Very early on the morning of the 5th, the sleeping coach in an express train on the Chicago & Alton road caught fire when the train was near Mexico, Mo., and was entirely destroyed. The fire was caused by an overheated stove.

Early on the morning of the 5th, a west-bound passenger train on the Iowa Division of the Illinois Central ran upon a broken rail near Ackley, Ia. The engine went off the track, ran upon a bridge and broke through, falling 14 feet into a creek. The baggage car and one coach went off the other side of the bridge, falling clear of the engine. The road was blocked 18 hours.

On the morning of the 5th, there was a butting collision between two trains on the Lowell Branch of the Boston & Maine on a bridge over a street crossing in Lowell, Mass. Both engines were badly damaged, and one was thrown from the bridge and into the street below. The accident is said to have been caused by a misunderstanding on the part of the two conductors.

Early on the morning of the 7th, an east-bound freight on the Toledo, Wabash & Western broke in two near Quincy, Ill., and in attempting to couple up again the two parts of the train were run together so violently as to damage several cars and wreck the tender, delaying the train five hours.

On the 7th, a car in a freight train on the Oswego Division of the Rome, Watertown & Ogdensburg was thrown from the track and badly damaged by a stick of timber which fell from a flat car in the train.

On the afternoon of the 7th, a train on the Dayton & Michigan road was thrown from the track at Grassy Creek, O., by a broken frog. The frog had been evidently broken with a sledge.

On the night of the 7th, at the crossing of the Baltimore & Potomac and the East Alexandria Branch of the Baltimore & Ohio at Benning's Station, D. C., an express train on the Baltimore & Potomac ran over a misplaced switch, through the transfer siding connecting the two tracks and into the head of a Baltimore & Ohio freight train, which was standing on its track, waiting for the express to pass. Both engines were badly wrecked and the express and mail cars were badly broken, and caught fire from a lamp and both were destroyed. A clerk in the postal car was burned to death and a man who was stealing a ride between two cars was killed. Notwithstanding that the switch was set wrong, the safety signal was displayed at the crossing.

On the morning of the 8th the drawhead of a box car in a freight train on the Louisville & Nashville & Great Southern pulled out and fell on the track near Rocky Hill, Ky. Several cars were thrown from the track and the road blocked five hours.

Near noon on the 8th, on the Erie Railway, near the west end of the Bergen Tunnel, a passenger train ran into a coal train which was running upon a siding, damaging the passenger engine and wrecking several coal cars.

On the 8th several cars of a passenger train on the Cincinnati, Lafayette & Chicago road were thrown from the track by a broken rail near Templeton, Ind., and badly damaged.

On the night of the 8th a freight train on the Houston & Texas Central road ran off the track near Brenham, Tex., blocking the road some hours.

Shortly after midnight on the 9th, the engine of the first section of a freight train on the Toledo, Wabash & Western road became disabled near Illiopolis, Ill., and the train stopping suddenly, the second section ran into its rear, injuring the engine badly and delaying trains 7 hours.

On the morning of the 9th the sleeping coach of a train on the Baltimore and Ohio's Central Ohio Division was thrown from the track at Cambridge, O., by a broken joint, wrecking the car and injuring five passengers.

On the morning of the 9th, as a passenger train on the Keokuk & Des Moines road was slowly approaching the station at Mitchellville, Ia., two coaches were thrown from the track by a broken rail and one of them was badly broken. The train was delayed nine hours.

On the 9th, a freight train on the Pittsburgh, Cincinnati & St. Louis struck a broken rail near Centerville, Ind., and the caboose was thrown from the track and upset.

On the 9th, a passenger train on the Lake Shore and Michigan Southern ran into the rear of a freight train near Brocton, N. Y., wrecking an engine and several cars and blocking the road several hours.

On the afternoon of the 9th, on the Erie Railway near Pannhorn, N. J., several cars of a coal train were thrown from the track, blocking the road two hours.

On the afternoon of the 9th, there was a butting collision between a wild engine and a passenger train on the Louisville, Cincinnati & Lexington road near Lagrange, Ky., by which both engines were badly damaged and the baggage car and one coach thrown from the track. The engineer and fireman of the passenger were injured. The wild engine is said to have been running on the passenger train's time, contrary to orders.

On the afternoon of the 9th, several cars of a freight train on the Peoria Branch of the Chicago, Burlington & Quincy road ran off the track near Galesburg, Ill., delaying travel three hours.

On the afternoon of the 9th, a freight train on the Indianapolis, Bloomington & Western ran off the track near Clermont, Ind.

On the evening of the 9th, a passenger train on the Rome, Watertown & Ogdensburg road was thrown from the track at Richland, N. Y., during a heavy snow storm.

On the night of the 9th, on the Indianapolis, Bloomington & Western road, near Danvers, Ill., a passenger train struck a broken rail and two cars left the track, one of them upsetting and injuring two passengers.

On the night of the 9th, a freight train on the Missouri Pacific ran off the track at the Gasconade Bridge, Mo., wrecking several cars.

Early on the morning of the 10th, the second section of a freight train on the Toledo, Wabash & Western road ran into the rear of the first section, which was stalled on a grade four miles east of Fort Wayne, Ind., wrecking an engine and several cars and blocking the track a whole day. It does not appear that the stalled train had any signal out.

On the 10th, an axle broke under a box car in a train on the Peoria, Pekin & Jacksonville road, near Jacksonville, Ill., throwing four cars into the ditch and wrecking them badly.

On the afternoon of the 10th, as a train on the Rome & Clinton Branch of the New York & Oswego Midland was starting from Westmoreland, N. Y., the drawhead and bumper on the rear end of the tender pulled out, delaying the train some time.

On the night of the 10th, on the Indianapolis & St. Louis road, near Irving, Ill., the sleeping coach of a passenger train was thrown from the track by a broken rail, delaying the train three hours.

Very early on the morning of the 11th, three cars of a freight train on the Houston & Texas Central ran off the track near Elgin, Tex., tearing up the track badly and blocking the road twelve hours.

On the 11th, an accommodation train on the New York & Oswego Midland was thrown from the track near Liberty, N. Y., by ice which had formed on the inside of the rails.

On the afternoon of the 11th, a parallel rod broke on the engine of a train on the Central Railroad of Minnesota near Good Thunder's Ford, Minn., and the engine and one car were thrown from the track and down a bank, injuring two of the trainmen.

On the 12th, a snow plow and four engines on the Kansas Pacific were thrown from the track near Buffalo, Kan., during a heavy snow storm.

On the evening of the 12th, a freight train on the Rutland & Washington road was thrown from the track by a broken rail near Pawlet, Vt., blocking the road several hours.

On the morning of the 13th, a passenger train on the Southwestern Division of the Chicago, Rock Island & Pacific road struck a broken rail near Columbus Junction, Ia., and three cars were thrown from the track and down a bank. The cars were badly broken and five persons hurt.

On the afternoon of the 13th, a north-bound passenger train on the Fort Wayne, Muncie & Cincinnati road struck a broken rail near Eaton, Ind., and one car was thrown from the track. This car was dragged over the ties some distance and was finally thrown against a bridge, breaking it up and injuring one passenger fatally and 14 others seriously.

On the night of the 13th, the engine of a passenger train on the Baltimore & Ohio road exploded its boiler near Mountsville, W. Va., throwing the engine, baggage car and smoking car from the track, killing the engineer, injuring the fireman fatally and the baggage master and express agent badly. The cause of the explosion could not be ascertained and the fireman was too badly hurt to be able to give any account.

On the night of the 13th a stock train on the Chicago, Burlington & Quincy backed into a train of empty cars on the Columbus, Chicago & Indiana Central at the crossing of the two roads west of Chicago. Several of the empty cars were upset and slightly damaged.

On the morning of the 14th a Milwaukee & St. Paul train ran into a Sheboygan & Fond du Lac engine at the crossing of the two roads in Ripon, Wis., throwing it from the track and breaking it badly.

On the morning of the 14th a stock car in a freight train on the Keokuk & Des Moines road jumped the track near Vincennes, Ia., and was considerably damaged.

On the morning of the 14th, near Lanesboro, Minn., on the Southern Minnesota, a freight train was thrown from the track and several cars were wrecked.

On the 14th, at West Aurora, Ill., on the Chicago, Burlington & Quincy, a car of hogs on a Chicago & Iowa train ran off the track, killing several of the animals and breaking up one of the trucks.

On the afternoon of the 14th the engine of a train on the Central Pacific struck a rock which had fallen upon the track near Boca, Nev., and was thrown from the track and considerably damaged.

On the evening of the 14th there was a collision between a Toledo, Wabash & Western engine and a Mississippi Valley & Western train on the track used by both roads near Keokuk, Ia. Both engines were badly wrecked, a number of cars damaged and the engineer hurt. The Wabash engine had been down to a tank a mile below, and the engineer thought he had time to run back before the other train started, but he met it on a curve, which prevented the engineers from seeing each other until too late.

On the night of the 14th a freight train on the Indianapolis, Bloomington & Western road ran off the track near Brownsburg, Ind.

On the night of the 14th, as an accommodation train on the Louisville, Paducah & Southwestern road was approaching Vine Grove, Ky., a draw-head pulled out and fell on the rails, throwing a box-car, baggage car and passenger coach from the track, and down a bank. Six persons were injured and the road blocked all night.

On the morning of the 15th, a train on the Baltimore & Ohio road was thrown from the track by a misplaced switch at Grafton, W. Va., delaying it about three hours.

On the morning of the 15th a passenger train on the Ohio & Mississippi struck a broken rail near Lawrenceburg, Ind., and the two forward cars went into the ditch. The express car caught fire and was burned up.

On the afternoon of the 15th, on the Nashville, Chattanooga & St. Louis road near Newcom's, Tenn., a passenger train ran off the track and the engine and baggage car went down a bank 30 feet high and upset, injuring the fireman and express messenger badly.

On the afternoon of the 15th, on the Central Railroad of M

nesota, as a passenger train was working its way through a snow drift near Big Thunder, the whole train left the track, injuring the President, who was on board.

On the evening of the 15th, a Burlington & Missouri River train ran into a train on the Southwestern Division of the Chicago, Rock Island & Pacific at the crossing of the two roads in Fairfield, Ia., throwing a sleeping coach from the track.

On the evening of the 15th the tender of a passenger train on the Jeffersonville, Madison & Indianapolis road broke an axle while the train was passing through Jeffersonville, Ind. The check chains held up the truck and the train was stopped, the tender still remaining on the track.

On the night of the 15th an east-bound express train on the Pittsburgh, Fort Wayne & Chicago road struck a broken rail near Arcola, Ind., and the engine with the refrigerator, express and smoking cars were thrown from the track and badly wrecked, injuring two persons seriously.

On the night of the 15th a west-bound passenger train on the Burlington & Southwestern road ran off the track on a bridge near Moulton, Mo., and the express and mail and passenger cars went off the bridge, fell 15 feet, caught fire and were destroyed. The conductor, baggage-master and mail agent were badly hurt.

Near midnight on the 15th four cars of a freight train on the Southwestern Division of the Chicago, Rock Island & Pacific ran off the track near Fairfield, Ia.

Very early on the morning of the 16th an engine and six cars of a freight train on the Erie road were thrown from the track at Greycourt, N. Y., by a misplaced switch. The track was blocked six hours.

On the morning of the 16th a car in a freight train on the Vermont Central road ran off the track near Milton Hollow, Vt., blocking the road four hours.

On the 16th an east-bound freight train on the Erie Railway was thrown from the track at Chester, N. Y., by a misplaced switch, blocking the road some time.

Shortly after noon on the 16th, a stock train on the Hannibal & St. Joseph road ran upon a bridge near Callao, Mo., from which several rails had been taken up for repairs. The engine and three cars broke through and went down, taking the bridge (which had just been rebuilt) with them, and killing or crippling 52 head of stock. The sectionmen had put out a flag, but the trainmen having been notified that the bridge was all right and repairs finished did not pay any attention to the flag.

On the afternoon of the 16th, on the Savannah, Skidaway & Seaboard Railroad at Montgomery, Ga., the engine of a passenger train was thrown from the track, blocking the road some hours.

On the morning of the 17th, on the Indianapolis, Bloomington & Western road, near Urbana, Ill., two cars of a passenger train were thrown from the track by a broken rail.

On the 17th, a switching engine on the Indianapolis, Bloomington & Western at Urbana, Ill., exploded its boiler while standing still on the track. The fireman and a switchman were killed.

On the evening of the 17th, an east-bound express train on the New York Central & Hudson River ran off the track near Jordan, N. Y.

On the night of the 17th, on the Detroit & Bay City road, near Oxford, Mich., a box car in a passenger train jumped the track, broke the couplings at both ends, and ran off the track nearly at right angles. The end of the derailed car was thrown clear of the track and the rest of the train ran on, nothing more being felt than a heavy jar.

Very early on the morning of the 18th, an engine on the Grand Trunk Railway at Black Rock, N. Y., backed into a baggage car standing on a siding, injuring both car and engine.

On the morning of the 18th an axle broke under the tender of a train on the Macon & Brunswick road, near Station No. 14, Ga., throwing the tender and seven box cars from the track.

On the 18th a wild engine on the Los Angeles & San Pedro Branch of the Southern Pacific road ran into a wash-out in an embankment near Ceritos, Cal., damaging the engine badly and injuring three men who were on it. There had been a heavy storm and the engine was sent out to ascertain what damage had been done.

On the afternoon of the 18th, as a passenger train on the Morris & Essex Division of the Delaware, Lackawanna & Western road was approaching East Newark, N. J., one of the parallel rods broke. The cab was badly broken, one of the crank pins torn out, and the connecting rod also broken, wrecking the engine completely.

On the night of the 18th two cars of a passenger train on the Charlotte, Columbia & Augusta road were thrown from the track by a broken rail near Batesville, S. C., and the conductor and a passenger were badly hurt.

On the night of the 18th a west-bound passenger train on the Indianapolis, Bloomington & Western road struck a broken rail near Crawfordsville, Ind., and the baggage car and two coaches left the track and upset. The conductor, the Assistant Superintendent, who was on board, and 13 passengers were more or less hurt.

On the morning of the 19th eight cars of a freight train on the Indianapolis & St. Louis road were thrown from the track by a broken rail near St. Mary's, Ind.

On the morning of the 19th an express train on the Pennsylvania Railroad ran off the track near Dillerville, Pa., wrecking the baggage car, badly damaging the sleeping coach, and blocking the track several hours.

About noon on the 19th, four cars of a freight train on the Keokuk & Des Moines road were thrown from the track near Pella, Ia., by a broken wheel and badly wrecked, blocking the track half a day.

On the 19th, as a train of coal cars was being backed upon a high coal siding at Paterson, N. J., on the Erie Railway, three of them were pushed over the stops at the end of the siding, fell to the ground and were badly broken.

On the 19th, a train on the Winona & St. Peter road struck a broken rail near Byron, Minn., and two passenger cars ran off the track and upset, injuring three passengers.

On the afternoon of the 19th, a freight train on the Baltimore & Ohio road was thrown from the track near Monrovia, Md., by a broken axle.

On the morning of the 20th, as a passenger train on the Morris & Essex Division of the Delaware, Lackawanna & Western was running down a grade near Summit, N. J., one of the driving wheels broke, shattering the running board and one side of the cab and disabling the engine.

On the morning of the 20th, a freight train on the Erie Railway ran off the track at the western entrance to Bergen Tunnel, blocking travel for two hours.

On the morning of the 21st, on the Morris & Essex Division of the Delaware, Lackawanna & Western, the engine of a passenger train was thrown from the track at Roseville Junction, N. J., by a broken switch rod.

On the morning of the 21st, on the Illinois Central, near Galena, Ill., three passenger cars and a sleeping coach of a passenger train were thrown from the track by a broken rail.

On the morning of the 22d, the engine of a passenger train on the Wilmington, Columbia & Augusta road was thrown from the track at Wedgefield, S. C., by a switch that had been purposely misplaced.

On the morning of the 22d, a freight train on the Grand Trunk Railway ran off the track at Whitten's Bridge, near South Paris, Me. Several cars were wrecked and the bridge badly damaged, blocking the road several hours.

On the 22d, the engine of a passenger train on the Savan-

nah & Charleston road exploded its boiler near Hardville, S. C., killing the engineer and injuring the fireman and wood-passer badly. The boiler had been in use two years only, and gave way at the junction of the dome and barrel.

On the night of the 22d, a freight train on the Chicago, Burlington & Quincy road ran off the track near Galesburg, Ill., delaying travel four hours.

Very early on the morning of the 23d, as a west-bound express train on the Shore Line Division of the New York, New Haven & Hartford road was passing East Lyme, Conn., a switch rod broke and allowed the switch rails to become misplaced, and the train ran over them and into the head of the east-bound train which was waiting on the siding. An engine and baggage car were badly wrecked and several other cars damaged.

On the morning of the 23d, the engine and baggage car of a passenger train on the Grand Rapids Branch of the Chicago & Michigan Lake Shore were thrown from the track and wrecked near Grand Rapids, Mich., by a broken rail. The engineer was killed and the fireman very badly hurt.

On the morning of the 23d, there was a collision between two freight trains on the New York Division of the Pennsylvania Railroad at Stelton, N. J.

Late on the night of the 23d, on the Philadelphia, Wilmington & Baltimore, near Darby, Pa., an axle broke under a car of the Delaware express freight train, and five cars were thrown from the track and badly broken.

Very early on the morning of the 25th, an express train on the Atlantic & Pacific road struck a broken rail near Moselle, Mo., and baggage, smoking, passenger and sleeping cars left the track, the smoking and passenger cars going down a high bank and upsetting. The smoking car was broken to pieces, and the passengers thrown out upon the frozen Meramec River. Eight persons were badly hurt.

On the morning of the 25th, the engine of a way freight train on the New York, New Haven & Hartford road was thrown from the track by a broken switch at Windsor Locks, Conn., and ran into a car standing on a siding, breaking it badly.

On the morning of the 25th, an express train on the New York Central & Hudson River ran off the track at Barrytown, N. Y.

On the 25th, an engine ran off the track of the Central Railroad of New Jersey at Elizabeth, N. J., causing some delay to trains.

On the 25th, at Aurora, Ill., on the Chicago, Burlington & Quincy Railroad, two coaches of the west-bound Dubuque express were thrown from the track by the breaking of a switch-rod.

On the 25th, on the Fonda, Johnstown & Gloversville road, near Gloversville, N. Y., an engine which had run ahead of its train to a tank was backed up so violently as to disable two cars and injure three passengers.

On the 25th, a freight train on the Chicago & Northwestern went through a bridge at DeWitt, Ia., injuring the conductor and two brakemen.

On the afternoon of the 25th, a train on the South Shore Railroad ran off the track at Hingham, Mass., and was delayed nearly three hours.

On the evening of the 25th, on the Old Colony Railroad, a South Shore train, which was behind time, ran into the rear of a local passenger train which was stopping at Harrison Square Station in Boston. The engine and several cars were wrecked, and five passengers hurt.

On the night of the 25th, as a train on the Baltimore & Potomac road was leaving the Calvert Station in Baltimore, the baggage car jumped the track and turned over on its side. The accident is said to have been caused by a defective frog.

Very early on the morning of the 26th, a passenger train on the New York Central and Hudson River ran off the track in East Buffalo, N. Y., the accident being caused by a broken rail.

About noon on the 26th, a transfer engine of the Louisville & Nashville road ran into the head of a Nashville, Chattanooga & St. Louis switch engine at the entrance to the Broad street tunnel in Nashville. Both engines were considerably damaged.

On the 26th, an axle broke under the tender of a passenger train on the Cleveland & Pittsburgh road at Wellsville, O., but the tender did not leave the track. On examination an old crack was found extending half way through the axle.

On the 26th, seven cars of a freight train on the Grand Trunk Railway were thrown from the track near Gorham, N. H., by the spreading of the rails.

On the 26th, a passenger train on the Louisville, Cincinnati & Lexington road ran off the track in Louisville, Ky., and was detained a short time.

On the afternoon of the 26th, the engine of a west-bound express on the Erie broke its driving axle near Sufferns, N. G., delaying the train some time.

On the evening of the 26th, while the engine of the pay train on the Paducah & Memphis road was standing at Boaz, Ky., the boiler exploded, injuring two men.

Early on the morning of the 27th a freight train on the Western Maryland road ran off the track near Union Bridge, Md., blocking the road several hours.

On the morning of the 27th a south-bound passenger train on the Wilmington & Weldon road ran off the track at Battleground, N. C., blocking the road five hours.

On the 27th there was a collision between a switching engine and a passenger train at the depot of the Pittsburgh, Cincinnati & St. Louis road in Richmond, Ind. One passenger coach was much damaged.

On the evening of the 27th the engine and four cars of a freight train on the Toledo, Wabash & Western road were thrown from the track at Roanoke, Ind., by a misplaced switch, delaying trains for ten hours.

On the morning of the 28th the engine of an east-bound passenger train on the Erie Railway broke a connecting rod near Ramapo, N. Y., and was badly damaged.

On the 28th, as a freight train was being backed at a high speed upon a siding in the Pennsylvania Railroad Yard in Jersey City, it ran into a loaded car on the siding, completely wrecking it.

On the evening of the 28th the engine of a passenger train on the Burlington, Cedar Rapids & Minnesota road was thrown from the track at Columbus Junction, Ia., by a misplaced switch.

On the night of the 28th, on the Rome, Watertown & Ogdensburg road, near Richland, N. Y., a snow-plow ran into the rear of a freight, badly damaging the caboose and the plow.

Early on the morning of the 29th, as a freight train on the Detroit & Milwaukee road was passing through Pontiac, Mich., a wheel broke under a freight car, throwing four cars from the track on a bridge over a street. The cars were badly wrecked, the ties stripped from the bridge and some of the timbers broken. The road was blocked for 24 hours, and all passengers had to be transferred around the wreck.

Early on the morning of the 29th, as a freight train in three sections on the Erie Railway was near Hobokus, N. J., the engine of the first section broke a connecting rod and was considerably damaged.

The second section was stopped in time to avoid a collision, but the third section ran into the rear of the second, wrecking its own engine and several cars, scattering the wreck over both tracks and killing the fireman. The broken cars caught fire from the engine and three of them were entirely destroyed. The road was entirely blocked for four or five hours.

On the morning of the 29th, a stock train on the New York Central & Hudson River road ran off the track near Tarrytown,

N. Y. Ten stock cars left the track, and one of them was upset and several animals were killed.

On the 29th, several cars of a freight train on the Baltimore & Ohio ran off the track near Swanton, Md., and were badly damaged. The accident is said to have been caused by a defective joint.

On the evening of the 29th, a train on the Rome & Clinton Branch of the New York & Oswego Midland was thrown from the track at Kirkland, N. Y., by the spreading of the rails.

About 9 o'clock on the evening of the 29th, as a freight train on the New York Central & Hudson River was crossing the canal bridge at Canastota, N. Y., the train broke in two, and the detached section ran back down the grade and into the head of another freight train which was following. The engine and five cars were wrecked, and the wreck caught fire and was almost entirely destroyed.

On the night of the 29th, five cars of a freight train on the Dunkirk, Allegheny Valley & Pittsburgh road were thrown from the track on the steep grade near Dunkirk, N. Y., by a broken wheel-flange.

On the morning of the 30th, the baggage car of a track on the Boston & Lowell road was thrown from the track near Somerville, Mass., by a defective joint.

On the morning of the 30th, as a train on the Boston, Hartford & Erie road was approaching Boston, a connecting rod broke, throwing the engine from the track on a high bank. The train was stopped by the air brakes and none of the cars left the track.

On the 30th, the engine, snow-plow and three cars of a freight train on the Bangor & Piscataquis road were thrown from the track near South Sebec, Me., and went down a bank 20 feet high, the engine upsetting and the cars being badly broken.

On the evening of the 30th, on the Maine Central near Har'ing, Me., the driving axle broke under the engine of a passenger train, but the engine did not leave the track.

On the evening of the 30th, near Willimantic, Conn., on the Hartford, Providence & Fishkill road, a tire broke on one of the driving wheels of the engine of a passenger train, disabling the engine and delaying the train two hours.

On the evening of the 31st, a wood train on the Rutland Railroad ran off the back at Cavendish, Vt., and demolished a wood shed and a section house, the engine stopping just at the door of a dwelling house. The accident is said to have been caused by a stick of wood falling on the track.

Some time about the 20th of the month, the cars of a passenger train on the Denver & Rio Grande road were blown from the track near Colorado Springs, Col., during a violent storm.

This is a total of 131 accidents, whereby 10 persons were killed and 96 injured. Seven accidents caused the death of one or more persons, 21 others caused injury but not death, while 103 accidents, being 78.6 per cent. of the whole, caused no serious injury.

These accidents may be classified according to their nature and causes as follows:

COLLISIONS.		
Rear collisions.....	13	
Butting collisions.....	6	
Crossing collisions.....	3	
Unexplained.....	1	— 23
DERAILMENTS.		
Unexplained.....	29	
Broken rail.....	22	
Misplaced switch.....	6	
Snow or ice.....	5	
Broken axle.....	4	
Broken wheel.....	4	
Broken switch-rod.....	4	
Accidental obstruction.....	3	
Broken or defective joint.....	3	
Broken or defective frog.....	2	
Broken drawhead.....	2	
Broken parallel-rod.....	2	
Broken bridge.....	2	
Spreading of rails.....	2	
Washed.....	1	
Running off end of siding.....	1	
Wind.....	1	— 94
BOILER EXPLOSIONS.		
Boiler explosion.....	4	
Broken axle.....	4	
Broken connecting-rod.....	3	
Broken tire.....	1	
Bumper pulled out.....	1	
Car burned while running.....	1	
Total.....	131	

Three collisions were caused by misunderstanding of orders, two by the breaking of trains in two, two by failure to send out signals where a train had broken down, and two by a misplaced switch. A number of the unexplained derailments are probably due to bad track, while snow or ice is undoubtedly the cause of several of them. Defects or failures of permanent way caused 36 accidents, and of equipment, 26 accidents. Perhaps the most noticeable features of the month are the very large number of broken rails and fastenings, the small proportion of collisions, and the very large proportion of accidents causing no serious injury to persons. Neglect of signals put out by trackmen while removing rails for repairs caused the breaking of one of the two bridges which gave way; the cause of the other failure is not recorded.

The number of accidents is much greater than the average for the year and exceeds that of every other month for the past twelve. The number of wounded is very much above the average, but has been exceeded twice, while the number killed is less than that recorded in every month but one. The large number of accidents is due mainly to the severe storms and intense cold which prevailed over a large part of the country during the month, and which too many roads were ill prepared to meet. As compared with January, 1874, there is an increase of 23 accidents, but a decrease of eight in the number killed, and two wounded.

For the twelve months ending with January the record is as follows:

	No. of accidents.	Killed.	Injured.
February.....	80	25	49
March.....	88	18	60
April.....	59	3	13
May.....	89	19	51
June.....	83	23	55
July.....	64	20	104
August.....	73	16	77
September.....	69	27	118
October.....	81	16	60
November.....	82	13	49
December.....	74	12	49
January.....	131	10	96
Totals.....	1,003	190	776

This is an average per day for January of 4.23 accidents, 0.83 killed, and 3.10 injured; for the year of 2.75 accidents, 0.46 killed, and 2.10 injured.

J. H. COFRODE.

J. H. SCHAEFFER.

F. H. SAYLOR.

J. H. COFRODE & CO., Engineers and Bridge Builders.

DESIGN AND CONSTRUCT IRON, WOODEN AND COMBINATION BRIDGE
AND ROOF TRUSSES, &c.,

OFFICE:

No. 530 Walnut Street, Philadelphia.

KELLOGG & MAURICE,

OFFICE AND WORKS: ATHENS, PA.



Iron and Wood Bridges, Roofs, Turn-tables, Etc.

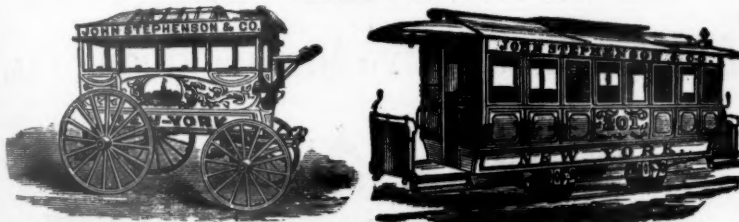
**PASSENGER CARS,**

Of the Finest Finish, as well as Every Description of CAR WORK, furnished at Short Notice
and at Reasonable Prices by the

HARLAN & HOLLINGSWORTH COMPANY Wilmington, Del.**WELLS, FRENCH & CO.,****BRIDGE AND CAR BUILDERS.**

Railroad and Highway Bridges, Roofs, Turn-Tables and Draw-Bridges, Bolts and Dimension Timber
to order. Specifications and estimates furnished. 140 DEARBORN ST., Chicago.

Cars, Light, Strong and Elegant.
ORDERS PROMPTLY FILLED.

**OMNIBUSES OF EVERY STYLE.**

No. 47 EAST TWENTY-SEVENTH STREET, NEW YORK.

CRERAR, ADAMS & CO., Railroad Supplies and Contractors' Materials,

AGENTS FOR ALL SIZES OF

SHEET COPPER AND BRASS FOR

LOCOMOTIVE WORK AND COPPERSMITHS,

Nos. 11 and 13 Fifth Avenue, Chicago, Ill.

Manufacturers of IMPROVED HEAD LIGHTS for Locomotives, Hand and Signal Lamps, Car and
Station Lamps, Brass Dome Casings, Dome Mouldings, Cylinder Heads and Car Trimmings of every
description.

New York, 30 Gold st. Boston, 13 & 15 Custom House st. Chicago, 146 E. Lake st.

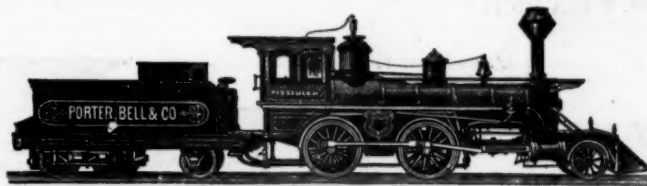
HUSSEY, WELLS & CO.,

Manufacturers of all descriptions of

CAST STEEL.

OFFICE AND WORKS:

Penn and Seventeenth Streets, Pittsburgh.

PORTER, BELL & CO.

10 x 16 cylinders, narrow-gauge Passenger Locomotive.

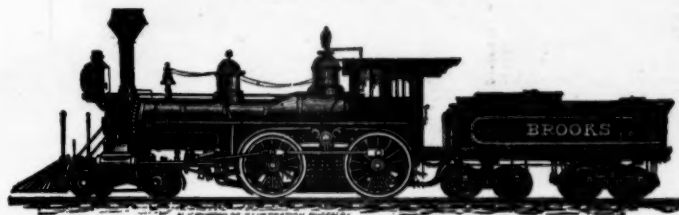
EXCLUSIVE
SPECIALTY**LIGHT LOCOMOTIVES,**

For Mines, Furnaces, Contractors' Use, and other Special Service; also Light and Heavy Styles of Narrow-
Gauge Passenger and Freight.

Office, No. 5 Monongahela House,
Works, A. V. R. R. and 50th St.,

PITTSBURGH, PENN.

BROOKS LOCOMOTIVE WORKS, DUNKIRK, N. Y.

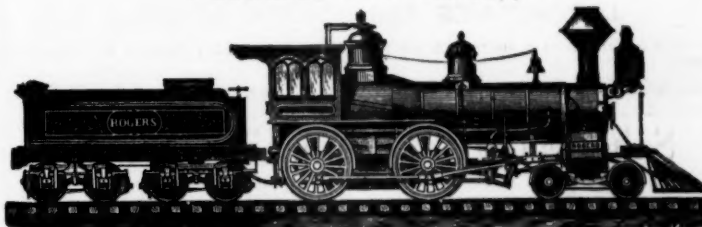


Orders Solicited for Locomotives Adapted for Every Class of
Railway Service.

M. H. HINMAN, Sec'y & Treas.

H. G. BROOKS, Pres't & Supt.

ROGERS LOCOMOTIVE AND MACHINE WORKS. Paterson, New Jersey,



Having extensive facilities, are now prepared to furnish promptly, of the best and most approved
description, either COAL OR WOOD BURNING

Locomotive Engines, and other Varieties of Railroad Machinery.

J. S. ROGERS, President.
R. S. HUGHES, Secretary.
WM. S. HUDSON, Supt.

THOS. ROGERS, Treas.

44 Exchange Place, New York.

National Locomotive & Machine Works.**DAWSON & BAILY,**

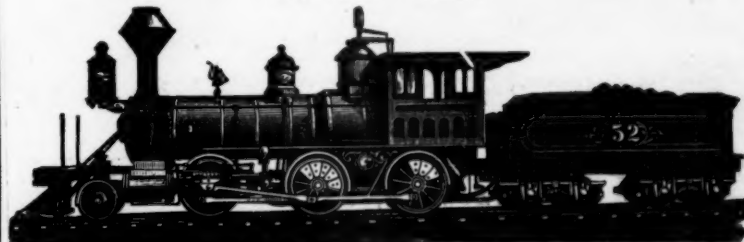
MANUFACTURERS OF

LOCOMOTIVES.

NARROW-GAUGE LOCOMOTIVES A SPECIALTY.

OFFICE AND WORKS AT CONNELLSVILLE PENN.

LOCOMOTIVE ENGINE SAFETY TRUCK CO.
OF NEW YORK.



Proprietors of the following Letters Patent granted to Levi Bissell, Aug. 4, 1857; Nov. 2, 1858 (ex-
tended Nov. 2, 1872); A. W. Smith, Feb. 11, 1867; D. B. Pratt, Oct. 16, 1860; W. S. Hudson, April 6, 1864
and May 10, 1864.

DRAWINGS FURNISHED AND LICENSES GRANTED ON APPLICATION.

A. F. SMITH, President.

M. F. MOORE, Sec'y and Agent.

ALBERT BRIDGES, Treas.

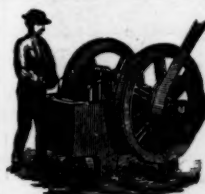
No. 46 Cortlandt st., N. Y.

BLAKE'S PATENT STONE AND ORE BREAKER.

New Patterns, with Important Improvements
and Abundant Strength.

For reducing to fragments all kinds of hard and brittle substances, such
as STONE for making the most perfect MACADAM ROADS, and for making
the best CONCRETE. It breaks stone at trifling cost for BALLASTING
RAILROADS. It is extensively in use in MINING operations, for crushing
IRON, COPPER, ZINC, SILVER, GOLD, and other ORES.

Also for crushing Quartz, Flint, Emery, Corundum, Feldspar, Coal,
Barytes, Manganese, Phosphate Rock, Plaster, Soapstone, etc.

BLAKE CRUSHER CO., NEW HAVEN, CONN.

RHODE ISLAND LOCOMOTIVE WORKS,

PROVIDENCE, RHODE ISLAND.

W. S. SLATER.

President.

B. W. HEALEY.

Sup't and

Gen'l Manager.

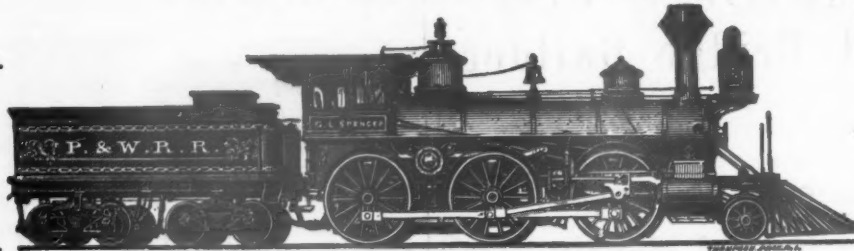
E. P. MASON.

Treasurer

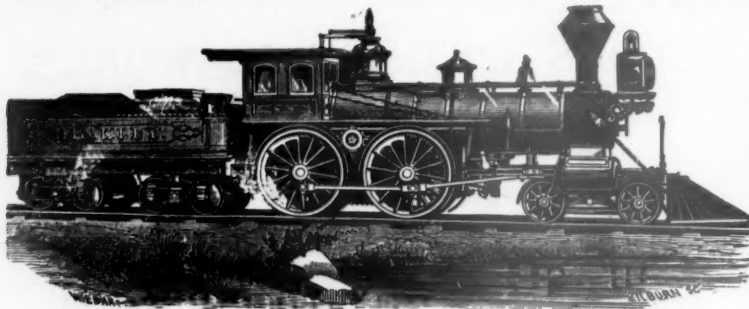
W. H. FENNER,

Secretary and

Ass't Treasurer.



HINKLEY LOCOMOTIVE WORKS



439 ALBANY STREET, BOSTON.

MANUFACTURE

LOCOMOTIVE ENGINES AND TENDERS,
BOILERS AND TANKS,

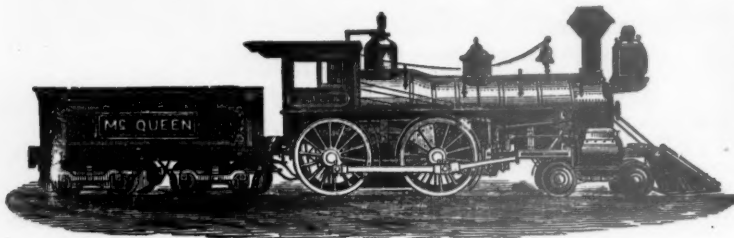
Gun Metal and Common Iron Castings, Brass and Composition Castings.

LOCOMOTIVES AND BOILERS REPAIRED.

Sole manufacturers of the "HINKLEY PATENT BOILER." All orders will be executed with dispatch.

ADAMS AYER, Pres't. F. L. BULLARD, Treas. H. L. LEACH, Sup't.

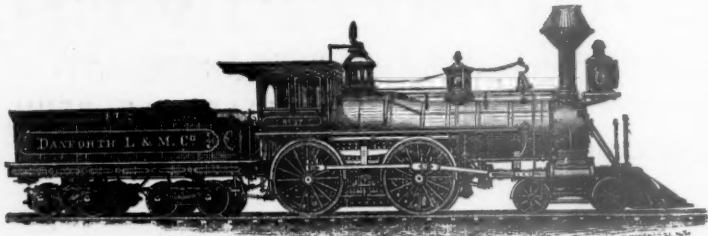
Schenectady Locomotive Works,



SCHENECTADY, N. Y.

JOHN C. ELLIS, Pres. CHAS. G. ELLIS Treas. WALTER McQUEEN, Supt.

DANFORTH LOCOMOTIVE AND MACHINE CO.

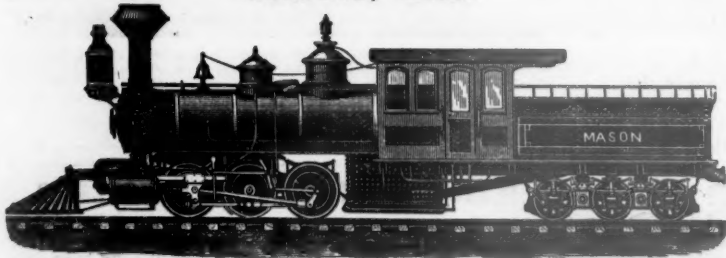
JOHN COOKE, Pres. dent.
J. T. BLAUVELT, Vice-President,
A. J. BIXBY, Sec'y and Treasurer.
JAMES COOKE, Superintendent.

PATERSON, N. J.

New York Office, 52 Wall St.
H. A. ALLEN, AGENT.

MASON MACHINE WORKS.

TAUNTON, MASS.



WM. MASON, Pres't.

WM. H. BENT, Treas.

FRED'K. MASON, Ag't.

BUILDERS OF ALL KINDS OF

LOCOMOTIVES.

INCLUDING DOUBLE-TRUCK LOCOMOTIVES FOR WIDE OR NARROW-GAUGE RAILROADS.
ALSO ALL KINDS OF COTTON MACHINERY.

BALDWIN LOCOMOTIVE WORKS.



BURNHAM, PARRY, WILLIAMS & CO., Philadelphia,

LOCOMOTIVE ENGINES.

Especially Adapted to Every Variety of Railroad Service, including

Mining Engines and Locomotives for Narrow-Gauge Railways.

All work accurately fitted to gauges, and thoroughly interchangeable. Plan, Materials, Workmanship, Finish and Efficiency fully guaranteed.

GEO. BURNHAM.

CHAS. T. PARRY.

WM. P. HENSZEY.

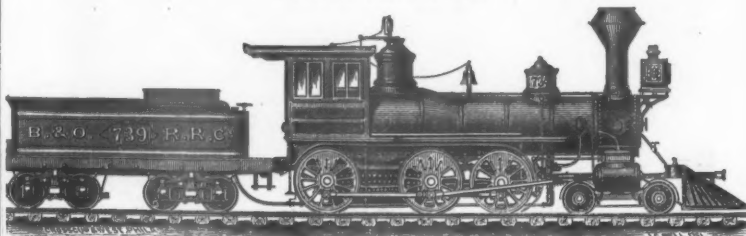
EDWARD H. WILLIAMS.

EDW. LONGSTRETH.

JOHN H. CONVERSE.

PITTSBURGH LOCOMOTIVE & CAR WORKS,

PITTSBURGH, PA.



MANUFACTURERS OF

LOCOMOTIVE ENGINES FOR BROAD OR NARROW GAUGE ROADS.

From standard designs, or according to specifications, to suit purchasers.

Tanks, Locomotive or Stationary Boilers furnished at Short Notice.

D. A. STEWART, Pres't.

J. A. DUBOIS, Sup't.

WILSON MILLER, Sec. and Treas.

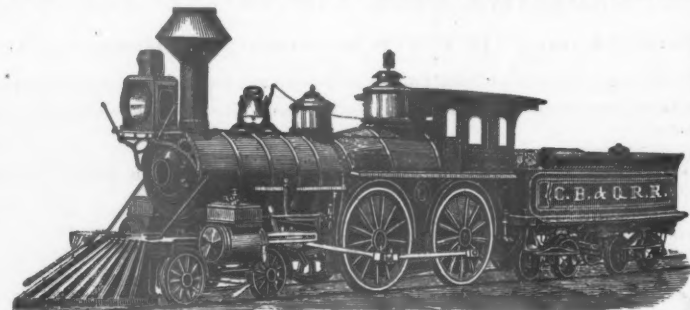
Taunton Locomotive Manufacturing Co.,



P. I. PERRIN, Supt. [ESTABLISHED IN 1846.] HARRISON TWEED, Treas.

TAUNTON, MASS.

Manchester Locomotive Works,



MANUFACTURERS OF LOCOMOTIVE ENGINES.

All work accurately fitted to gauges. All parts duplicates and guaranteed of best material and workmanship.

ARETAS BLOOD, Agent, Manchester, N. H.

JOHN A. BURNHAM, President.

WM. G. MEANS, Treas., Boston, Mass.